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MAN'S ORIGIN AND DESTINY

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MAN'S ORIGIN AND DESTINY

SKETCHED FROM

JUSTIN WINSOR,
CAMBRIDGE, MASS.

THE PLATFORM OF THE SCIENCES,

IN A COURSE OF LECTURES DELIVERED BEFORE THE
LOWELL INSTITUTE, IN BOSTON,
IN THE WINTER OF 1865-6.

BY
J. P. LESLEY,

MEMBER OF THE NATIONAL ACADEMY OF THE UNITED STATES,
SECRETARY OF THE AMERICAN PHILOSOPHICAL SOCIETY.

PHILADELPHIA:
J. B. LIPPINCOTT & CO.
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G. J. Chas. Wilson
Nov. 1, 1899.

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PREFACE.

THE lectures contained in this volume were written in the summer of 1865, at a distance from the author's notes and library. This will account for the paucity of special references, observable throughout the greater part of the book.

When delivered in the lecture-room of the Lowell Institute, the following winter, they were illustrated by numerous wall pictures, tables of statistics, maps and diagrams of various kinds, only a few of which are given as woodcuts in the text.

It is proper to add that, owing to the very judicious restriction of time to one hour by the rules of the Institute, not much more than the half of each lecture was read, except in the case of the last two, which occupied four evenings; the course being courteously extended by the honourable trustee to thirteen for that purpose. The twelfth lecture was, therefore, never written out, and is committed for the present to the imagination of the reader, with the suggestion, that it would better justify one portion of the title chosen for the book than anything actually to be found between its covers.

Circumstances made it impossible to print the lectures at the time they were delivered. Two years, in fact, have passed. New and important discoveries in archæology have intervened. A good many paragraphs have been inserted, therefore, in the text, and numerous foot-notes added. The simplicity of the original arrangement has been lost. The separate subjects of the different lectures have become, to a certain extent, confused; and portions of the book take on the aspect of detailed discussion, suitable only to a scientific memoir, while other portions retain their original character of bird's-eye view.

The author never contemplated anything beyond a general sketch of the present bearings of science upon the vexed question of the origin and earliest history of man. But the question has many subdivisions. He intended the several lectures to be separate sketches of these subdivisions of the field of discussion, mere introductions to their proper study. His views are stated, therefore, in round terms. Nothing is closely reasoned out. Much is left to the logical instinct,

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and more to the literary education of the reader. Reference is everywhere made to sources of information within easy reach of all. Even the style of an essay has been avoided. The book is merely a series of familiar conversations upon the current topics of interest in the scientific world.

If its perusal start a single youthful mind upon the track of an original investigation—as the perusal of Harcourt on the Deluge, twenty years ago, opened before the author a new series of combinations of the facts of history and science—or if, without any deeper study of the facts alleged upon its pages, its general views inspire a single reader with more reverence for science, less fear of fresh opinions, a more intelligent curiosity about forgotten things, which still are at their old work in the modern world, and with a surer faith in the growth of human happiness, the author will be more than satisfied.

But even the mere retrospect of the labours of men of science upon the theme of this book has been so great a pleasure to him that he cannot repress the feeling that others must enjoy it likewise.

J. P. L.

La Tour de Peitz, Vevay, Switzerland.
Nov. 20, 1867.

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MAN'S ORIGIN.

LECTURE I.

ON THE CLASSIFICATION OF THE SCIENCES.

In considering how I can best open the subject of the present course of Lectures, I am reminded of a favourite saying of the greatest Lecturer that ever lived, and one whose lightest recorded thought has sunk, with the weight of a great principle of truth, into the consciousness of modern times:—

'He that hath ears to hear, let him hear!'

One of the artists of New England told me that, in his opinion, no man could successfully paint a tree, a deer, or a dog, unless he first became one himself; unless he had pursued and been pursued; felt the freedom of the winds and waters, and that intimate brotherhood and fellowship with living things, which sharpens every sense to the quick impressions of nature. Enthusiasm is the mother of art.

Russell Smith, certainly the master scenist of America, built himself a cottage on the summit of the Alleghanies, in the heart of the primeval forest, and brought down from thence a friend, the finest elm tree in the world, painting it, as large as life, upon the great drop-scene of the Academy of Music in Philadelphia; where it still stands, spreading out its gigantic stem and splendid plume against a background of blue sky; and every branch and twig and leaf of it is real, for it was drawn in love. The artist summered it and wintered it as his bosom friend,

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until he knew how every vein of sap which fed it, ran; until he could distinguish the voice of its particular foliage from the whole music of that wilderness, as a nice ear picks out and follows the part of some dear instrument in an orchestra, until he could recognize afar off every scar and moss-spot on it, as a lover can detect his heart's delight among a thousand other beauties at a ball. Love is the law of knowledge; and love is life in the beloved.

Rosa Bonheur in the cattle-yard; Hinckley among his dogs; Church sailing through ice-bergs and drinking into his soul the flaming northern skies; Espy upon his house-roof at Harrisburg watching live-long nights the formation and dissolution of clouds; Agassiz and Desor in their cave-house on the medial moraine watching through eight successive summers the motions of the glacier of the Aar; Hammond for eighteen months weighing his meat and drink to discover and explain the exact effects of whisky and tobacco upon the growth and decay of the living tissues of the human body; or that noble Frenchman, who, instead of flying, like the rest, from the mysterious plague, or fighting with it hopelessly and desperately because its nature was unknown, rather chose to make love to it; took it, as Delilah took Samson on her lap, to shear his locks of demon strength; shut himself in with it; watched the progress of the disease in his own body; recorded all its symptoms; explained its methods of attack; discovered its weak point, and gave with his dying hand to the world a remedy:—such men as these teach us the noblest of all arts—the art of Enthusiasm.

When the thinker becomes a speaker, he becomes an artist. His audience can justly criticise his subject only as they pardon his enthusiasm by sharing in it. He introduces to your acquaintance his oldest and dearest friends—thoughts, which to him are great thoughts, because they have commanded his best years. He paints in words before you the scenery of his soul's home; a mingled landscape, where the reason has ploughed and reaped by day, and the fancy loitered and listened and made love by night. He gives you water from a spring, the equal of which, he fain would have you say, exists not anywhere. He names you over all his orchard trees, and looks wistfully to see how their fruit hits your taste. He leads you

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by his well-worn paths of argument, to points of view which have become the delight of his spirit; seats you where he has sat himself a thousand times entranced, and mutely begs you to worship with him before his wondrous Oberland. If he fails to inspire you with that delicious enthusiasm, he loses your friendship, and you lose his. If what to him are mountains of eternal truth, to you seem mist and fog, nothing is gained, and everything is lost; to you, the present effort; to him, the entire past. The teacher must be believed in—for the present moment, at all events; let the *conclusion* determine how justly. Cordiality is of more avail for the discovery and appreciation of truth than curiosity. Only when all cried, Io Bacche! together, the god appeared. And even the Divine Lecturer could only tell what the world already knew or was well prepared to know.

We all, no doubt, have favourite sciences. We all, no doubt, consider each one his own the flower and perfect consummation of the intellectual world. Does not the visible universe concentrate its glories in the individual eyeball? It is only by numberless shiftings of position that the human mind can obtain a generous perspective of all truths. Each science has its own domain, and is paramount lord within those limits. When it visits neighbouring potentates, it may be received with all the honours; but, when seated, sits subordinate, and must hold its sceptre with diminished dignity. The king is the first at court, but the general is first in the field. And what are king and general but no-bodies in the laboratory of Liebig or Faraday? And what are Liebig and Faraday but express packages to the mind of Captain Anderson in an ice-fog off the banks? Everything in its place,—everything to its purpose: that is the prime law. That differentiates the universe, gives it living activities, intense energies, precise results, variety of beauties, individual worth. But all for each and each for all, is God's grand spell upon his universe, by which he marshals its forces against disorder, and establishes eternal harmony; drawing slowly forth his silken rainbow-coloured ribbon from that mist of threads which hovers behind the loom. This is the charm of the science of the nineteenth century; harmony in diversity; multiplicity in unity. Never was the dissection

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of single objects carried so far as by our special naturalists; and yet the dreams of the ancients were not so grandly universal as the panorama unrolled for contemplation and elucidation by modern philosophers.

Yet there is being established, with all this, a real order of precedency among our sciences. Some of them take naturally a wider range than others: geology, for instance. Some grow daily more and more departmental, functional, and ancillary.

The history of empires is the history of science. Their boundaries shift. Smaller states are absorbed into kingdoms. On the other hand, empires which have been indiscreetly enlarged by an agglomeration of hostile or unsympathizing nationalities, fall asunder, and out of the *débris* are instituted separate and almost independent *régimes*.

I will speak of Geology as illustrating both these tendencies. At first it was like one of those wild tribes of Germany that conquered the Roman Empire. It was a rude, undisciplined study of a few of the most prominent features of the ground. But gathering strength as it developed the observing faculties, and emancipating itself from its aboriginal superstition of the *Lusus Naturæ*, adopting the purer faith in Cause and Effect, it conquered and subjugated, one by one, all the other branches of human knowledge. The dukes of this new Burgundy outshone and outweighed their liege lords—kings and emperors. Its later princes—Von Buch, De Beaumont, Murchison, and Lyell, formed a splendid dynasty. The wealth of the whole world of science flowed into its public treasury. They were even not afraid to wage war against the world of metaphysics, and it seemed as though Church as well as State would be absorbed into one great, upstart, irresponsible despotism.

But how is it now? Geology, as an empire, exists no longer. Instead, we see three kingdoms: three kingdoms so separated, that no one who rules in the one is accounted of the highest authority in the other two. 1st, We have the science of Structural Geology, which may be said to represent, somewhat, the old science before it was divided. 2nd, We have the science of Palæontology or Fossil Geology, which first succeeded to the power of the old empire,

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and has for some time past been dominating, with a touch of arrogance too, its structural neighbour. And 3rd, We have the science of Chemical Geology, a new and rising state, full of enterprise, and destined to absorb the confederate states, known, in scientific parlance, by the name of Physics.

And yet these three are one. Nor can a student of nature account himself well-bred unless he travels through them all; although he will accomplish nothing great unless he naturalizes himself, and makes a home for himself, in only one of them. But what will not then that home of his become! What a castle of intellectual strength! What a cloister of various learnings! What a museum of antiquities! What a rendezvous of the choicest spirits of the age!

Let me imagine myself for one moment a geologist, well established in such a place, occupied with the study of the formation of this earth, its sedimentary and metamorphic and volcanic rocks, the faults it has committed, the plications and contortions it has endured, the mineral veins deposited in its fissures, the organic forms it has entombed, its reservoirs of brine and oil, its burning mountains, its earthquakes, its changes of sea level, its glaciers and moraines, its golden gravel, its meteoric stones, its ossuary caves and deposits of worked flints, its motions through space, its influxes from the sun, its beginnings in eternity. Can any theme be more capital, more universal? Is any science excluded? Is any question impertinent? Must I not subpœna everything that lives, and that does not live, before this case is through? Has not every savant of the Academy something to tell about it?

The architect and civil engineer begin by relating their experience of the choice of granites and clays, the weight and strength of building materials. The miner and the metallurgist recount me their latest improvements in raising, selecting, and reducing the various ores. The chemist hangs upon my wall his nicest table of equivalents, and explains me why the *magnesian* limestones were the *first* ones formed. The zoologist and the botanist lay upon the table, on each side of me, their latest enlarged and corrected synopses of fossil and recent synonymes. The Archdeacon of Calcutta employs his heaviest mathematical sym-

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bols in weighing for me the plateau of Central Asia, while Thompson and Hennesy are calculating the maximum and minimum possible thickness of the crust. With his new automatic tide gauges, and with the waves produced by the earthquake of Simoda, Bache gets for me the mean depth of the Pacific, while Darwin and Dana decide, from the arrangement of their coral reefs, the number and direction of its belts of alternate elevation and depression; Sabine and De Struve report the progress they are making in determining the earth's exact departure from a globular form. Astronomers swarm about me with their speculations upon cosmogony, and assign various reasons why the earth's nucleus is hot or cold, is fluid or solid, and why it must have sprung from the consolidatiou of a nebula, or why from the conglomeration of an infinite number of meteors. The Alpine Club petition for the pleasure of my company on their next ascent of Mont Blanc; and even Ruskin, the artist, insists on fixing me in a good light, so that I may catch the genuine bedplate lines on the precipices of the Arve, and never again make the absurd blunder of mistaking the cleavage of the shists for original stratification.

Is it any wonder that the poor geologist's head is turned by so much attention? That he accounts his own particular science the summum bonum of truth? Yet in almost an equal degree may the physicist, the astronomer, the naturalist, the archæologist, the metaphysician cheat himself with the sweet delusion, that he sits at the centre while others stand around. For let a soul, by purity, patience, and love, tame but one science, and it will have, like Una with her lion, the freedom of the whole forest.

What, then, is the real order of the sciences? Or is there such a thing? Or is knowledge like a hollow sphere, within which the soul of man feels itself floating between equal attractions in all directions? Is there any hierarchy of the sciences? Is it as noble to know, as ennobling to determine, the number of rings constituting a genus among myriopoda, as it is to discover the number of vibrations corresponding to a given colour in the rainbow, or the number of formations deposited with their successive floræ and faunæ in all the ages from the Lawrentian era to the present time? Or, setting this æsthetic ques-

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tion on one side, can the human reason find no just arrangement of the sciences, by which our ideas of progress and development may be realized, and their natural subordination and interdependence so shown forth as to satisfy our love of perspective?

Others may answer this question in other ways. The remaining time, which your politeness will allow to this lecture, cannot perhaps be better consumed than in stating, as clearly as I may, the order which appears most natural to me, when I attempt to classify the various departments of human knowledge. And I find myself in a manner compelled to make this preliminary statement, since I have chosen for the subject of the present course of lectures, 'the relation of the modern sciences to the primeval history of man.'

Do not imagine, from this title, that I intend to develop in formal style, after the manner of the German metaphysicians, a history of philosophy. I willingly leave that immense task to the vivacious eloquence of Erdmann, prince of Hegelians, and to the golden pen of Whewell, vice-chancellor of induction. I have a much more special design: to show how the bonfires we have lighted and are feeding with fresh fuel every day, cast back their illumination through the forest and over the moors of history; bringing out from the thick night and distance, bizarre but moving forms, progenitors of our progenitors a hundred times removed; lighting up their savage features, not wholly bestial nor insane, not wholly destitute perhaps of some angelic or Adamic excellence; so that we may specify some of those earlier forms of soul, to which was given this planet for a habitation, and be able to make out the original nature of many things which gibber and mowe at us, through the dim past, as if they were supernatural attachments to our history, evil genii, impertinences and intrusions on the premises of our race, and not amenable to any exorcism except that performed with fasting and prayer. It is my firm belief that the time comes for explaining the beginnings of human life upon the earth; that if all the sciences can be brought to act in concert, they can do much towards already setting up primeval archæology upon its future throne. I shall endeavour to show—I am sorry I can only do it sketch-wise

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—how we can combine the results of the geologists, the ethnologists, and the linguists, with the creations of the priest, the poet, and the architect, to restore and re-colour the faded, broken fresco-painting of the ages on the walls of the temple of history. But to accumulate evidence, we must examine the value of each witness. And the first step is to call the roll and swear them in by name and residence.

The earliest attempts to classify knowledge distinguished between the *natural* and *supernatural;* between the *physical* and *metaphysical;* between that which relates to phenomena appreciable by the bodily senses, and that which relates to the essence and power of things, the moods of intellect, and the status and intentions of Deity. Of the first-named distinction of the subject-matter of human knowledge into the *natural* and *supernatural* I may have occasion to speak at large in a future lecture, because it has been much misunderstood. The second distinction, viz. into *physical* and *metaphysical,* although it maintains its importance, in a measure, to the present day, is felt by every thinker to be so general and so vague, so indistinct in the light of modern investigations, that it remains in use only as a popular convenience for common conversation.

The word physics, from the Greek verb *fuō*, I grow, means the science of nature seen under the conditions of growth. But we need to introduce among the sciences of nature's growths the sciences of nature's *forces*, with many of which we have become experimentally acquainted. These forces are no longer considered as outside of nature, or above nature (*meta*physical), they are no longer gods and demons, but *laws*. In fact, modern science has transferred the name physics entirely to the discussion of this class of sciences, including the knowledge and use of numbers and quantities. The word 'physics' now means the teaching of the *growth-causing* agencies; light, heat, electricity, galvanism, magnetism, gravity, &c. And the utmost to which the meaning of the word is ever extended only takes in the application of the experimental knowledge of these forces to the sub-sciences of astronomy, meteorology, and geodesy. All true φυσις is now no longer discussed as 'physics,' but as 'natural history;' the growth of plants; the growth of animals and man. And

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yet this growth is effected by a force which has not been enumerated among the physical forces, and is not even alluded to in the science of physics proper, viz. the form force, the *forma formans* of the schoolmen; that idea of itself, which every growing being has, how it shall form itself in growing. This has nothing (so far as we know) to do with what we call mind, reason, instinct, or any of those fruits of brain-structure or nervous organization, which are the special objects of study of the intellectual sciences; but underlies and antedates them; inasmuch as the form-force even determines in each family, genus, and species of beings, whether there shall be a brain or not, and what rank its intelligence, reason, or instinct shall take.

This living form-force is the true basis of the sciences of natural history, distinguishing them from the science of the imponderables, or the so-called physical forces of space.

But there is also what may be called the dead form-force, which acts (equally beyond our comprehension) through the inorganic or *non-growing* world, producing all kinds of crystals, minerals, and rocks; determining their shapes also, with as despotic a decree as that which fatalizes the shape of a tulip tree, or of the panther that stretches himself in ambush along its branches. In fact all the crystalline world is as much a 'growing' part of nature as are the vegetable and animal kingdoms.* But we suppose them to grow under the operation of the purely physical forces only; and therefore we place their sciences of chemistry, mineralogy, and geology, between pure physics and pure natural history.

In the historical development of all the sciences, lies are the beginnings of truth. That Helen, whose beauty set the world at arms, began existence in a shape so hideous as to be concealed for nine long months from every eye. Criticism then, even the criticism of love, would have been fatal to her. So has it been with each embryo science. Hidden in the ignorance of Plato and of Aristotle, in the so-called history of Herodotus and geography of Strabo, were the germs of some of our grandest sciences;

* See the beautiful sap-growth of Arragonite in the caves of Derbyshire.—Q. J. Geol. Society, Lond. xxi.

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ethnology, philology, sociology, theology; the natures of which being nobler than those of the physical and natural sciences, inasmuch as they deal entirely with man, man's soul and God, God's providence and institutions for the future, require longer to mature, and are therefore still not so far advanced as they might be; but in those early days they were like the Hebrew poet's chaos, *bohu-va-vohu*, without form and void.

Those tales of the Makrobioi, or long-lived happy patriarchs; of the Lotophagoi, nature's own epicures; of Pigmies and Troglodytes; of men with tails, and men with but one foot, and that one large enough to be of use at noon for an umbrella; of Arimaspians and cannibal Massagetes; of satyrs and ogres; of Niobe and Lot's wife, and whole nations turned for their pride into marble statues; of Deucalion and Pyrrha, Nimrod and the Tower of Babel, Cadmus and his dragon's teeth, Pelasgus, Dorus, and Æneas, and the numerous lying genealogies of nations, accepted then as all-sufficient explanations of the course of events preceding the times of their authors, and rejected by us as figments of the imagination,—were these not the faint first flutterings of the unborn and yet unfashioned fœtus, which has grown in course of ages to be that thing of strength and beauty which we name ethnology, the science of nations? that queen regnant of the human sciences, daughter of chronology, and mother of history, whose two fair sisters sit at each hand of her—mythology and archæology—an imperial group!

It is impossible not to feel that we are taking human studies in their natural order. First, *thoughts;* then, *things.* In the beginning was the Word; then the Word was made flesh, and dwelt among us. We must go backward, not forward, to obtain the absolute; for out of the abstract conception comes forth the concrete reality. Before the universe was, God was; and with him dwelt the eternal and immutable relations of number. Mathematics and Physics give us the prime postulates of all creation. This is the group of sciences which must necessarily lead the procession.

Then follow the incarnations of numbers and forces in matter, giving us chemical and geological laws for the

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creation of the lowest and oldest, the inorganic world. Thus we have our second group.

Then come the organic sciences as a third group, carrying up the scheme of life to man.

Fourthly, we have the historic sciences; discussing what man's life has been, from his appearance on the planet until now.

Then rise grave questionings—what man's life *ought* to be. From these questionings, begun by Pythagoras and Plato long ago, and continued by philosophers of all ages, a steadily thickening crowd (become at last so great that we may affirm with truth, in this year of 1865, that all the thinking men and women of Europe and America are in it), there has been elaborated a new science, Sociology, the doctrine of Right Society; or, rather, a fifth group of allied sciences under the various names of Statistics, Finance, Construction, National Defence, and Equity. Each of these has its facts and its theories, its principles and its history of practice. Mankind was made gregarious; society has always existed; manufactures, commerce, war, and law have always been, and must always continue to be, its four methods of self-expression. No others can be named. On their well-collated statistics must be established all our just explanations of history, all our successful schemes of philanthropy, all politics that may escape reproach. Statistics are the mathematics of Sociology; and the Treadwells and Stephensons, the Barings and Girards, the Napoleons and Grants, the Blackstones and Marshalls of modern times, are as much men of science, if not of as high a grade, as Pascal and Descartes, Leibnitz and Newton, Pierce and Henry, Berzelius and Dumas, Owen and Agassiz, in the so-called world of science. To freight a Great Eastern with living souls for a land of liberty is a grander achievement of the centuries than to transmit the price of American gold by submarine telegraph to the Brokers' Board in London, to be used in behalf of vested wrongs for back-holding the progress of humanity. Nor is it to be doubted for a moment by a Boston audience, at the close of the Great Rebellion, that the Atlantis of Plato was a crude boy's dream compared with that splendid vision of a justified and sanctified Republic, founded on the experience of the Saxon

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race in a new world, equipped by all the arts and sciences, instructed by Christianity, and invested with liberty, prophesied for the last thirty years by your own immortal William Lloyd Garrison, and now almost fulfilled. In this large workshop of the Free States of America, the whole rolling stock of civilization is being reinvented, tested, and started off afresh upon the track of history. In the schools, and courts, and legislatures of these commonwealths, the social sciences are rapidly attaining that nice precision and that generous scope which already characterize the mathematical, the organic, and historical sciences, with all of which they are so closely allied.

And now, if I have not already wearied your patience, I must instance still another—the last and noblest class of all the group of the intellectual sciences. Those which I have already described relate to the measurement of space and time, to the attributes of matter, to the growth of plants and animals, to mankind as part of the animal world, and, finally, to mankind in masses, obedient to physical necessity and planetic circumstances. But these relate to *Man*. These teach the expressions of a supernatural nature; of a spirit which we believe to be immortal, self-conscious, self-studious, inventive and creative, open-eyed, and tongued for speech, responsive to all mysteries, and destined for all glories.

The base and platform of this pre-eminent group of sciences is Language. Philology is the mathematics of the soul, teaching us the rudiments of utterance. The sciences of feeling are named Belles Lettres and the Fine Arts; Logic is the science of thought; Ethics the science of conscience. All these are old. Modern Christianity has added two more to the list, the sciences of Education and of Philanthropy. And, to make the whole complete, we must end the long catalogue with the science of worship, that is, Religion.

In order to refresh our memories, and keep perfectly distinct these different groups, with their elements, I have hung upon the wall the chart which you see before you. It was a scheme constructed to classify the books of a large and miscellaneous library. And for practical use its different sub-divisions or classes were distinguished by the primary colours of the rainbow, in their natural order from

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red to violet. The backs of the books were marked with these colours, and the cards on which the titles of the books were separately catalogued were also of corresponding hues. But you have probably already noticed that instead of six classes, the scheme upon the wall has eight; the first one, white, for science as such, or human knowledge in the general; the eighth one, violet, containing but one name, and one which I have omitted to mention in my foregoing remarks. It is not a science, properly speaking, yet. But you will all perhaps agree with me that it ought to be. We may, however, well despair of it when we remember that the greatest of fools, Boswell, wrote the most delightful of biographies. Yet it is so far forth a science that it stands apart from the rest; dealing not with mankind as animals, nor with mankind as a race, nor with mankind in society; nor with man's life in the studio, in the lecture-room, or in the church; but with men, as men; each mortal by himself, sitting for his picture before the lens of Truth. In its intensest form, as Autobiography, it is the science of one's self; the summation of knowledge, for God is unknowable, except as reflected in his image, man; and man's individual life collates into a personal history the entire circle of celestial and terrestrial phenomena, mimicking like a falling raindrop the surrounding universe.

In all ages, since the invention of letters, attempts have been made to immortalize the heroes and prophets of the world by writing out their lives; and most of the knowledge of the ancient world which remains to us, has descended in the form of biography. The pictures which forgotten scribes have painted of Moses, and Joshua, and David, and Isaiah, and the Maccabees, are among the most precious legacies of antiquity. What is more exciting than the life of Pythagoras by Iamblicus? or more delightful than Plutarch's Lives of noble Greeks and Romans who had lived before his day? Yet after all that scholars can say of them, the biographies of the ancients were failures, in comparison with the best of modern times, because of the meagreness of ancient life, the difficulties of intercourse, and above all, the narrow range of ideas, owing to the limited education of the writers.

In this, pre-eminently, the difference shows itself between ancient and modern days. *We* skim the ocean and

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devour the land, collecting facts by steam and transmitting them by telegraph. *They* consumed half their lives in a few snail-pace journeys and baffling voyages, confined within the compass of a thousand miles, a prey to terrifying accidents, victims of unblushing falsehood and unbounded ignorance.

The crowd of modern travellers and writers is so great that every lapse from honest observation, every mistake of eye or ear, every inept construction, every misquotation, every false assumption, every distortion of word or deed through pride or prejudice, every failure of appreciation by stupidity, every undue exaggeration by affection, every mistake of superstition, is sure to be corrected, almost as soon as made.

But in those ancient days the lonely priest went plodding on, year after year, reaching occasionally some monastic home where he could find a week's or a month's repose, as a rare and welcome guest from foreign lands. And there he heard, without the power or wish to criticise, extraordinary tales, incredible to modern minds. None had been there before him by whose judgment he could guide his own belief. He wrote all down. And for a century, perhaps for twenty centuries, no traveller would follow him to verify or falsify his stories. You see how little chance Sesostris, Cyrus, Zoroaster, or Lycurgus had to get their biographies recorded properly. But even if the truth about them could have been attained to, and even could we summon them in person before our Niebuhrs, Macaulays, Michelets, and Prescotts, to be cross-examined, on their oath and honour, would not each of them be apt to answer in the words of the knife-grinder: 'Lord! I've no tale to tell, sir!' For the manifold relations which men of mark and genius in the nineteenth century hold to all departments of art and knowledge, constitute the chief difficulty in the way of writing their biographies. And at the same time this difficulty, well wrestled with, by men of equal mark and genius, has carried up the tone of life-writing to the pitch at which we have it.

Had there been an Edward Forbes in Plutarch's day, we should have had a Wilson or a Geikie in Plutarch to describe him. For Nature is the best Quarter-master, and never hesitates to fill an order when it is properly red-

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taped. But there could be no Edward Forbes in ancient days, for the same reason that there were no elephants nor monkeys in the Jurassic age, nor pterodactyles in the Devonian era, nor lepidodendra in Silurian times. All things wait their turn. The genius of development is a fine scene-shifter. The Demiurge works leisurely, and hates to be hurried. Time is of no account, but circumstance is indispensable. A perfect Biography requires a type Man. Men are just now beginning to write the Life of Jesus, because the life of Jesus holds closer relationship with the millennium than with the middle or the heroic ages, and demands for its comprehension the knowledge of universals, rather than particulars. The general working of his spirit upon and within the constitution of the world, had to be, not tested, but testified by the experiments of twice a thousand years before its all-embracing applicability, its never-failing certainty, its infinite many-sidedness could be assented to by science. Crichton must visit all the courts and universities, and conquer in every contest of etiquette or eloquence, before he can be called the Admirable. And each of the centuries is itself a separate court and university, at which the growing humanity takes some new degree.

The true science of biography is professed by the great novelists of the day. We see its growth in reading the works of Goethe, and Scott, and Thackeray, and Victor Hugo, and their thousand pupils in the divinest of all arts, the picturing of human life. These are the teachers of the nineteenth century. These are the books into which have fallen all the treasures of learning and wisdom of all the ages. Christianity, honour, politeness, wit, and humour are taught now chiefly through novels. They are the mirrors in which the many-sided power of the modern world contemplates itself. Each man, each woman goes to the novel now to get such glimpses of their inner life, and their outward relations to nature and mankind, as thrill them with emotions of pride and love, plunge them in remorse, lift them again with hope, confirm their fresh-born resolutions, and warn them against insidious dangers. The good that Charles Dickens has done the world is incalculably great. I should rather be Charles Read, and have written 'The Cloister and the Hearth,' than have

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been Gibbon, and have written 'The Rise and Fall of the Roman Empire.' One American city now is larger than the whole Roman Empire was in the days of its splendour. We must measure matter spiritually, to get its just dimensions. Compare Horace with Tennyson, or Cicero with Sumner, or Augustus Cæsar with Abraham Lincoln, if you wish to see how the world has grown in the richness of its relationships, and how the development of man as an individual has kept pace with it. Barren enough would be, even could it be written, the biography of an aboriginal savage.

How far backward we shall hereafter be able to trace this law of human development it would be rash for me, or for any other man, to say with dogmatism. Nor do I desire to take up the vexed question here this evening. The sciences which it has been the object of this lecture to classify, are not themselves sufficiently developed to settle it. Mankind still wear too disagreeable a resemblance to their apes, the quadrumana, to argue it. From that elevation which the Christian strives to reach, where the last trace of hog and tiger and baboon will leave his nature, and he shall rest, transfigured, at his Master's feet, and feel himself a worthy friend of angels—perhaps he may hereafter look down, without those uncomfortable emotions, which even the fairest discussion of the origin of man gives rise to now. Enough, that so far as written history is concerned, and some dim glimpses into pre-historic times can be obtained, the law of human progress, of social, mental, and moral development, is a great certainty; on which all our learned histories and philosophies are based; and without its clear and consistent recognition, all reference to the early ages of mankind will be mere losing ourselves in Sorbonian bogs and Hercynian forests, filled with

> 'Perverse, all monstrous, all prodigious things,
> Gorgons, and Hydras, and Chimeras dire.'

It is my intention in this course of lectures to attempt to show how far the sciences, as they are now advanced, succeed in throwing light upon the early history of our race. I do not know that I need make any apology for the choice of this subject in preference to one more strictly

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professional: although it is by no means, in the language of the world, a useful one. But I feel sensibly the tendency of our times to utilitarianism and materialism. I think it is wise sometimes to shut up shop and walk in the twilight, and look up at the stars, or down upon the sea. The end and object of all science is, not to print calicoes, but to brighten up the face of man. And if the thought of ages long ago can breed within the human heart one sentiment of pious contentment with its lot, or one hope of future happiness, or any increase of that faith which believes that all things are well ordered and sure, and work together for the good of those that love God,—that thought of ages long gone by is useful.

But the mere attempt to reconstruct the past is favourable to our knowledge of the present. In no way can we better judge of tools than by building with them. I purpose in this course of lectures to test the temper of our sciences, to see if they will break on one of the hardest of all subjects of discussion. In doing this we will pass in review, as it were, their capabilities. This of itself will well repay our time.

The chief charm of all such subjects as the one I have chosen, lies in a sort of super-naturalism which floats about them like a haze; tinting them purple and gold as the air at sunset tints the distant mountain-tops. In our daily life we feel the hardness and roughness of matter, until our souls are sore and faint. But when we turn to the far distant past, we feel this hard and rough material world melting and mixing with strange fancies, pliant laws, conjectural processions of events, cloudy possibilities, and over all, the bending form and earnest face of the All-Father at His work. So sang the old Hebrew bard:—'I am Sophia; I am the abstract wisdom; I was with Him in the beginning, when He laid the foundations of the earth, and the morning stars shouted for joy.'

The ancient histories, like the primary rocks of the North, are all rounded and polished and streaked and beautified by the slow movements of the Recent over them. We may find columbines here and there blooming in their rifts.

It does us good to cultivate the grand superstitions which are indigenous to that mountain-land. What is

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super-stition, but the posture of the human soul when it stands erect and treads brute matter under foot. We talk of our *under*-standings: Yes—but what of our *over*-standings? We men of science of the nineteenth century are becoming too exclusively men of understanding. 'I will speak,' said Paul, 'I will speak with the understanding and the spirit also.'

All I would say in this introductory lecture is this; that I do not believe in a beginning without God, any more than in an end without Christ; and therefore you may expect to hear me treat all the parts and details of the investigation into the early life of mankind on the earth, not only by the rules of the Naturalist, but also in the spirit of the Spiritualist; and with a profound faith in Christianity as the blooming of the century-plant.

The modern sciences conspire to prove that man is an animal, and that his history is bound up with the zoological developments of the remotest geological times. But this does not injure the discussion of his spiritual faculties and his immortal future.

The sciences agree in impressing us with man's subjection to the physical laws which are so despotic over all other departments of nature. But this need not blind our eyes to the function of the Will; to the laws of right and wrong; the reality of responsibility, and the alliance of the soul with superior natures, unseen as well as seen.

The sciences enjoy together a code of criticism, which they make obligatory upon the scholar of the past; a code too little known, too long neglected by the scholars of the past. By this criticism we will find all written history false or defective; and all human language so overcharged with the effete decomposition of ancient ideas and practices, as to make philology rather a barrier against, than an avenue towards, the knowledge of antiquity. But on the other hand, is *that* to overthrow our faith in the sublime traditions which we have from those old times? The light of antiquity streams into our Church of the Present through wonderful stained windows—and is all the more ravishingly beautiful, and quite as useful for all that. While we learn that no ancient Scripture is to be believed,—we learn also that *all* ancient Scripture is to be believed. When we turn towards the future we see as

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through a glass darkly, but still we see; and all the better by the nearer we bring our eyes to the glass that stops our vision. So when we turn towards that other eternity, the past, we see as through a glass darkly, but still we see; and all the better for the criticism which has been reduced to such perfection by the labours of men of science in our day.

I repeat then, that for the truthful and useful discussion of the relations of the modern sciences to the early history of man, it is necessary for your lecturer to believe as profoundly in the essential and indestructible principles of the Christian religion as in the axioms of Euclid or the law of chemical equivalents. Nor has the slow progress of the sciences of geology and comparative anatomy done more to retard our knowledge of primeval antiquity, than has the unchristian state of the theological and social sciences.

In my next lecture I will illustrate the difference between the ancient forms of knowledge and our modern sciences; and show how impossible it is, without the help of a cultivated fancy, to investigate the natural history of an age of human existence, over which an uncultivated fancy bore entire sway.

In the third, the fourth, and the fifth lectures of the course, I will treat of the antiquity, the dignity, and the unity of the human race. I will devote the sixth lecture to the social life of the ancients. The seventh lecture will be on the origin of language. The eighth on the origin of taste and the development especially of architecture. In the ninth I will give you my theory of the origin of letters; the invention of the alphabet; and the nature of those spiritual fancies which became concrete in the mythological traditions of the world. My tenth lecture will treat of the religious instinct, and its embodiment in ceremonial worships. The eleventh will be devoted to what I consider the most ancient symbolism of the priesthood.

If I make my views clear to an audience so exacting of precision and completeness as this is sure to be, it will be more than I dare to hope. But at all events I can give you some faint sketch of the expanse of the knowable which lies before the soul that reverently and lovingly undertakes to question Heaven and Nature about the beginning of its kind.

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LECTURE II.

ON THE GENIUS OF THE PHYSICAL SCIENCES, ANCIENT AND MODERN.

In the last lecture I gave you a classification of the modern sciences in eight groups, the first group representing science in the general; and the second group comprising the mathematical, exact or physical sciences proper.

My lecture this evening should show you the relations of this second group to the early history of man. In other words, should answer the question, how much information the mathematicians, the astronomers, the meteorologists, the geodesists, or physical geographers, and the students of light, heat, electricity, motion, &c., can give us respecting the planting of human society upon the earth.

Not much. No! not much. But yet a little.

Before I recount this little, I have something more, introductory, to say respecting the right which modern science has to speak at all upon this subject; a right, as you are probably well aware, denied; denied by the pulpit; I mean, of course, from the uneducated and more ignoble side of the pulpit. For science has already won stalwart champions from among the clergy; and we less seldom now are forced to listen to those storms of mingled arrogance, absurdity, and bad taste, which formerly made of the pulpit a very cave of Eolus; those discordant denunciations of dangerous novelties, through the loud uproar of which were ever to be more easily distinguished than any other words, the warning words of Paul to Timothy: 'Keep that which is committed to thy trust, avoiding profane and vain babblings and oppositions of science falsely so called, which some professing, have erred concerning the faith.'

A thorough-bred and noble-minded theologian will scorn

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to turn against himself this beautiful apostrophe of the philosophic and great-minded apostle, this wide and tender appeal to the fresh heart of Christianity to keep itself from the intellectual idols of that day, the demoralizing sophisms of Athens, and the beastly Gnosticism of Antioch and Alexandria;—against his own inner life; against the education of the 19th century; against these ennobling and refining sciences which have been born of Christianity in her best estate, and glorify her on earth, as the spotless robes of her elect will glorify her in the heavens.

Let us comprehend, then, before we go one step further in this course, the difference between the so-called science of the ancients, of which Paul spoke, and the sciences of modern times, which he knew nothing about.

They differ in two respects, the most essential possible: 1, In their genius, or animus; 2, In their method, or apparatus.

1. The genius, or animus, of the ancient science was essentially fanciful; childish; cared little for consistency; was inexperienced; preferred to believe; was impatient of criticism; had no *purpose* in its investigations; no use for their results.

The spirit of modern science is just the contrary;—practical and manly; at once critical and comprehensive; more disposed to deny than to affirm; insists upon all things being put upon their trial; rejects even truth herself if she stammers before the court; cross-examines without pity; insists upon absolute consistency; is regardless of consequences; takes nothing for granted; worships cause and effect; investigates always in the light of some hypothesis, and applies every discovery instantly to use.

2. In the second point, of Method, the difference is equally patent to observation. The method employed of old was as fanciful as the spirit. The only intellectual tool above the level of their senses, which the ancients had to work with, was their quick and fertile imagination. With this they reasoned. Their powers of observation were fine, but they neither knew what to look for nor how to correct false observations, nor how to combine what they knew, so as to frame laws by which to carry on the work. What little they got, the most of it was worthless; and what was valuable they soon lost. There was no con-

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cert among their sages. They washed the gravel, but could not crush the quartz. They merely worked the out-crops of knowledge, because they had neither engines for deep mining, nor railways to take away the ore, nor furnaces wherein to bring the metal to nature, nor laboratories for assaying its purity. They wrote books, but there were no reviewers. In a word, true science was as impossible a product of the human mind so long as the fancy fished and hunted through its primeval wilderness, as commerce and luxury and art are impossible until the invention of the axe, the plough, the anvil, and the loom, cause the physical forest to disappear with its wild denizens, and farmers, artisans, and townsmen to take their place.

The whole story is told in one sentence, when we say that modern science replaces Fancy by Experiment. Its whole profession is inquisitorial. It tortures the dumb truth. To say what you can prove is the only passport to its favour. None of your suppositions, is the only response it deigns to give the sciolist. It is harder on contractors than any army-inspector at Springfield. It cares for no expense in renewing and improving its machinery, and keeps selling off its condemned material to—the clergy. 'Be sure you are right; then go ahead,' is its favourite saying. It may wink at the fancies or inaccuracies of a favourite over-night, but woe be to him in the morning! With its whole soul modern science hates idols—those that Lord Bacon classified, and all others,—and despises hero worship. It encourages predictions as stimulants, but murders the prophet whose vision comes not to pass; yet it has great patience when the prophecy is both very new and very grand.

You will notice then that the great distinction between ancient and modern science is this: that the former was the product of undisciplined fancy, and the latter is the product of careful, repeated, and systematic experiment; simply the difference between *conjecture* and *knowledge*. For fancy and experiment are the two poles on which the world of human knowledge turns. Or, to change the simile, fancy is the steam which lifts the piston-rod of intellectual progress; experiment, the guides in which it moves.

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Now let me apply these ideas to the first member of the group of mathematical sciences with which we are dealing to-night; the science of numbers. It affords us a fine illustration of the difference between ancient and modern science. I do not speak just now of the aboriginal ideas of numbers which the earliest tribes of men obtained in their savage state. I shall speak of that directly. And I use the term 'ancients' in its common sense, meaning the classical ancients, of whose life and doings we have some traditional history.

The ancients invented arithmetic and geometry, but the moderns have possessed themselves of that all-powerful apparatus of investigation, the differential calculus. The ancients had a fanciful or superstitious reverence for numbers, believing them to embody an occult and fearful magic, according to which the universe was originally created, and under the influence of which all life was thought to move. The moderns love numbers, because by them they can work out in a reasonable and precise manner both the darkest and the noblest problems of creation—the distance of the stars, the weight of the planets, the velocity of light, the composition of matter, the progress of population, the rate of insurance on life and property.* The mathematics of the ancients could produce nothing higher than astrology; that of the moderns has produced astronomy, meteorology, geodesy. Its last and crowning triumph has been the establishment of the law of the 'convertibility of forces,' by which we now know that not the smallest portion of the universe is ever lost; that motion, when it stops, becomes so much light and heat; that light and heat, when they distribute themselves, supply to nature an equal quantity of electricity or galvanism; that galvanism becomes magnetism; and that magnetism gives place again to motion. Did St Paul mean to say that all *this* is 'science falsely so called'? Is this the γνωσις that he denounced so vehemently, as opposing itself to all that Jesus Christ had given him to hold in trust until he should come again to judge the world in righteousness? I trow not.

Let me call up before your imagination that great vision

* The truthfulness, the reverence of exact statement and description, which distinguishes the occidental from the oriental man, may be deduced, perhaps, rather from this influence than from any other source.

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which stood to the ancient philosophic world for the sum of all speculation upon the way God made the worlds. It was their γνωσις; the doctrine of the Gnostic or Oriental world. I leave you to judge yourselves how much science there was in it; and how wisely, seeing its intense, proud, irreconcilable opposition to the Gospel of Christ, Paul warned his followers not to be seduced from their holy faith by it. In one form or other the whole mathematico-physical science of the ancient world consisted in this cosmogony. It stated its fanciful principles thus:—

1. That matter and spirit are the two hostile elements of the universe.

2. That there can be no intimate intercourse between the Absolute, pure spirit, God, and the Material, gross, vile, sin-producing, chaotic, rebellious, and insane stuff out of which bodies are made.

3. That therefore the universe must have resulted from the existence and operations of energies or intelligences holding an intermediate place between the Absolute and the Material, filling up or bridging over the awful chasm between God and Matter.

Upon these assumptions, and this comprehensive syllogism, a thousand fanciful philosophers erected their cosmogonies; like the cathedrals of the middle ages, all different, but all belonging to one style; some smaller and plainer, others imposing for their immensity, bewilderingly complicated, and covered over with elaborate ornamentation. The central idea of all of them was that of emanation. Eons came forth from the Divine essence as deftly and numerously various as ribbons from a juggler's mouth. Down slid the long Jacob's ladder, with an angel or archangel standing upon every rung, until its foot touched and rested firm upon the mass of crudity to be informed. High at its summit stood, waving her wings, the Celestial Sophia, and at its foot the Demiourgos or Creator of the earth, the Jewish Jehovah, with face downcast, and brawny arms, the Terrestrial Sophia always by his side. And this was the most advanced philosophical statement of the origin of men and things that the science of the ancients ever succeeded in making; and modern science can detect in it neither rhyme nor reason, because it was neither based on observation, nor calculation, nor experiment.

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Let me set before you now another and far different picture. That was 'science falsely so called;' this is true science. It may not be scientific truth, for its demonstration has not yet been completed. But it is *true science* for all that; because it is the product of a Fancy disciplined, mathematical, experimental, and observant. I allude of course to the Nebular Hypothesis.

The Nebular Hypothesis is to us modern naturalists what the gnostic cosmogonies were to the cabbalists of yore, and is illustrated in a perfect manner by the genius of modern science. It has swelled rapidly to its present proportions by insensible degrees; by yearly accessions of facts, discovered and recorded in the different departments of inquiry. Its constitution is purely mathematical. Grant its one postulate,—That space was originally full of homogeneous matter obedient to the laws of physics—and its whole argument follows logically to the close; and it accounts for everything we see and know about the visible world. And this first postulate is strictly *reasonable;* even if it turn out in the end not to have been *true;* for 1, It agrees with all experimental observation as thus far made; and 2, It is based upon a set of observations of its own. I mean the observations of telescopic nebulæ. Nor can it be finally disproved and laid aside until more powerful telescopes shall have been made to resolve into separate stars the last remaining nebulæ. And even then the *à priori* possibility stands good. Saturn's rings will continue to discuss the question with any comet that may happen to drop in.

Emanation was the genius of the old cosmogony; *Evolution* is the genius of the nebular hypothesis. It paints the universe as either at first created an infinite mist of unequally distributed elemental atoms; or else as, at stated intervals, becoming such. It sees great movements beginning, or re-beginning, in this unformed but living infinite; centres of growing aggregation; and tendencies towards those centres. It calculates the consequences of these tendencies, and proves that great gyrations must result from them. It shows how the laws of heat will bring about consolidation; and how the laws of motion will effect at first a ring and then a planetary system, in each vortex, throughout infinite space. Thus

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stars and suns, nebulæ and comets, earths and their satellites, appear upon the scene; each with its proper motions; each destined to work out a different history, according to its circumstances. Then it takes up our solar system, and calculates, and weighs, and keeps perpetual watch upon it. It suspects the existence of an extra member of the system, and by pure dint of numbers finds it. It proves the molecular discreteness of Saturn's rings, and the aqueous character of the envelopes of Jupiter and Mars. It invents the thermo-electric pile, and proves that the sun's spots are not so hot as the rest of its face, and that the body of the moon is as utterly cold as space itself. It invents the spectroscope, and makes out with it five of our metals in the sun, and two of them in Sirius. Then it takes up our earth, and shows how once it more than filled the entire orbit of the moon, first throwing off a ring which became our moon, and finally condensing to its present form, a globe of lava, with a crust of rock, a skin of water, and an envelope of air. It sketches out the story of this crust: how its first flakes emerged and joined, and were re-enforced and thickened from below, compressed, turned up, re-melted and re-formed: how a steady torrent of hot acid waters rained down constantly upon all portions of this forming crust, disintegrating it as fast as it was consolidated, and flying up again in steam, to carry off its heat into surrounding space: how in due course of time the seas became cool enough to retain both their waters and the alkaline and acid sediments which they brought into it: how the chlorates and carbonates of the land changed partners when they reached the sea, and formed the salt which gives it sweetness, and the dolomite which made its ancient bed: and how, as time went on, changing the proportions and relations of terrestrial elements, form after form of life appeared, each suitable to the exact amount of heat or cold, of light or darkness, moisture or drought, acidity or alkalinity, of its place of birth, and changing then to something else, or something better, when it could no longer live a life conformable to its own nature; each form superior to the one preceding it; until at last man came, to find a world grown firm enough to live on, cooled to the temperate point, soiled, shaded, lighted, watered properly,

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sprinkled with gold and precious stones, inlaid with iron and brass, and floating through what is to him a finished universe.

Have we not here a procession of realities, where before we had a mist of dreams filled with the fantastic gibbering of ghosts? That is just the distinction between the ancient Gnosis, and, in a less degree, all ancient knowledge, and the modern sciences.

Let me now turn your attention to the same strong contrast between ancient and modern thought which the practical *application* of these cosmological views exhibit. I mean the application of the old Gnostic theories to the practice of astrology, and the applications of modern astronomical science to the discovery of the laws of climate, to the practice of navigation, and to the measurement of land, forming what we call the sciences of Physical Geography, Navigation, Geodesy, and Civil Engineering.

The essential element of the contrast still is, that the one is a system of fancy, the other a system of facts; the one exercised habitually a cruel power over the lives of men by its claims to magic; the other blesses mankind, not only with the purest lessons of universal law and order, but with comfort in the house, and safety on the sea.

Take a well-known example from the history of the founding of the Christian Church. In the Acts of the Apostles we read that, at Ephesus, an uproar threatened the best part of its citizens with fire and sword for doubting that the stone, which the worst part worshipped, fell from Jupiter. It would be hard to raise a riot now-a-days, in Washington, by any story our astronomers could tell about the great ring-meteorite which forms the central object of attraction in the Museum of the Smithsonian Institution. Modern science calculates that five millions of these bodies strike the outer stratum of our atmosphere every day; and that the major part of them, driven by their own or the earth's velocity to various depths in it, are triturated, smelted, evaporated, distributed by the winds, and slowly settle to increase the size of the earth. An occasional larger mass, becoming incandescent only on its outside, throws off a cloud of volatilized matter as it passes through the atmosphere, and then resumes its dark, cold flight through space—space that is full of such. Now

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and then one hits the earth in its orbit so fairly that it succeeds in reaching the bottom of the atmosphere, and buries itself in the soil, or in the broad expanse of the ocean. In the old days of astrology men would have built a temple over it, and organized a priesthood for its worship, and regulated politics by its magnetic auguries; but in our days of astronomy, the finder cuts it up into pieces and sells them for five dollars a-piece, to be labelled and stowed away in cabinets with bottled tarantulas, Indian arrow-heads, and coprolites from the chalk.

One perhaps is powwowed over at a meeting of the Meteorological Society, where an interesting paper is read by Mr A. on the observed height, length, direction, velocity, and luminousness of the meteor's flight, as seen from half-a-dozen small villages in different parts of the country; and another piece may form the subject, perhaps, at a meeting of the Chemical Society, of an equally instructive paper by Mr B., showing the probable constitution of the meteor, from a careful analysis of the fragment; disclosing the presence of so much iron, so much nickel, so much schreibersite, with remarkable traces of carbon; suggesting the possible existence of unknown organisms, whether animal or vegetable, the author cannot say, upon the planetic body of which this meteor seems to have formed a part. A third perhaps goes over to Vienna, where, at a meeting of the Imperial Academy, the venerable Herr Hoffrath Haidinger draws attention to certain impressions, as it were, of human fingers, in the at-one-time plastic mass, but only at one end, and shows that the end so marked must have been the backside of the meteor as it flew, behind which, as in a ship's wake just abaft the rudder-post, an eddy of incandescent air and gases had been formed, reducing the metal to plasticity and leaving upon it these impressions; at the same time he shows how the solid banking up of the air in front of this frightful projectile must have brought its forward career to a sudden stop, when the earth's gravity would take effect and bring it, almost at a right angle, to the ground.

Such are the two different ways in which ancient and modern science would treat the objects of science, showing always the same preponderance of a helpless and therefore fearful fancy on the one side, and of a bold and

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powerful criticism on the other. The human race was placed upon the earth at the same disadvantage through ignorance, which prevents a traveller from sleeping the first night he spends in a strange inn. The human heart grows timid in the dark, while familiarity with the obscure breeds contempt. The human race regard old heathen terrors now with the same nonchalance with which a family, born under its roof, hear noises in a haunted house; or rather with that staunch, earnest, watchful intelligence with which an engine-driver walks round and round his well-regulated and thoroughly comprehended, yet tremendous, machine.

You will not of course mistake my meaning so far as to imagine that I contrast the ancient and the modern worlds! I am only contrasting the ancient gnosis with modern science. Superstitions of the lowest kind still fill the earth. I speak of the genius of the learned world. The same uncultivated fancy keeps alive in our day, among the uneducated classes and races of men, astrological and all other ancient absurdities. They float daily to us across the Atlantic, like cloud-rack, to be absorbed and made to vanish in the clear, dry intellectual air, which, thank God, we were born to breathe. The education of the world as a whole has hardly yet commenced. It might well strike us with astonishment to see a *well*-educated world fighting for slavery instead of for liberty, reeling with drunkenness, reeking with squalid vice, roaring with obscene profanity, as so much of ours does! No, we are simply considering the contrast between the intellectual condition and habits of the philosophic world as it existed a few thousand years ago, with what its intellectual habits are now; and what is the actual Christian value of the science of nearly the entire population of these Northern States, of Scotland, Switzerland, and Prussia, of the upper classes in England, France, and Italy, and in fact of the wealthy everywhere.

About six months ago a letter, addressed to me in Boston, reached me, I know not by what means, through the Office in Philadelphia. It had been written by some motherly body down in Maine, and enclosed an old one-dollar bill. It gave the hour and minute of the woman's birth, and begged me to return the horoscope in diagram,

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with the prediction founded on its figure. And in a touching little postscript, as badly spelled and written as the letter itself, she added the birth-date of her favourite son, and begged me to include his fortune in her own.

Now it is a very curious question: on what principle the notion of *the government of human fortune by the stars* could have been so early, widely, and permanently established. The idea of cause and effect, or of antecedence and consequence, not to go into its metaphysical discussion, seems inherent in intelligence. Even the lower animals exhibit it. The reason why our ponies are alarmed at wheelbarrows and dummy engines, is evidently because they cannot comprehend how anything can go unless it be preceded by a horse. They seem to be infected with the same horror of the prodigious, which we would tremble under were we to observe St Denis marching off from martyrdom with his head under his arm. Our savage ancestors never became intellectually reconciled to an eclipse of the sun or of the moon because they could suggest no benevolent cause for it; it seemed to them like some deadly swooning of a father or a mother, threatening themselves with orphanage. The worship of the heavenly bodies must have borne exact proportion to the daily and nightly benefits they bestowed upon mankind. At the equator the sun was an enemy, at the poles a friend. The Arab addressed his praises to 'the great rock in a weary land,' because it protected him from the solar rays. The Scandinavian, on the contrary, watched the declining sun from June to December with undisguised anxiety, erected slanting dolmens to detect the first certainty of its approaching return; and when assured that its face was once more set towards their habitations, over which their enemy the snow had already begun to heap itself, they dragged the yule log to the hearth, and danced and sung and drank the grand carouse of all the year, making the frozen air resound with their Christmas carols under the mistletoe, long before Christ was born, or a mass had ever been said in honour of the Sun of Righteousness. The celebrated contest between sun-worship and pyramid- or water-worship which characterized a part of the monumental history of Egypt was a conflict of sentiment between the equatorial and the polar zones, the iconoclastic sun-worshippers

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coming into the valley of the Nile from the mountains of Armenia and the distant steppes of Scythia, at the close of the 14th* dynasty, 2000 years more or less B.C., as they did again under Cambyses about the year 500 B.C., and again, to take permanent possession, as the Turks of the 13th† century of the Christian era, long after the old sun-worship had been exchanged for the rational religion of Mahommed.

In like manner the worship of the moon must have sprung from that dependence on her lovely light which was inevitable in an age of forests, when men had neither lamps nor clocks to live by, and were surrounded by such wild beasts as bows and arrows could do little to offend, lions and tigers, hyænas, auroxen, and the great horned Irish elk, wolves and wild boars, and the immense cave bear, the elephant, and the rhinoceros.

Without the waxing and waning moon man would have taken no account of time; no weeks, no months, nothing but the long cycle of the year. The idea of sequence was bound up with the moon; she became the goddess of order, made story-telling possible, and lovers' assignations, and parliaments. On the worship of the moon the whole Druidic system of law, as well as ceremonial, leaned; and when its canons were abrogated and its usages were suppressed by Christianity, they still continued to exist as popular superstitions. The majority of farmers, to this very day, regulate their planting and felling of timber, their pruning and grafting, by the phases of the moon; while their wives in the kitchen would find all their yarn untwist, and all their soap go back, unless they consulted the almanac.

In one or two instances modern experimental science has actually reinforced the ancient superstitious observance of the moon. It is now well understood that young plants, like human babies, must have plenty of rest. If they shoot

* Mariette (Aperçu, &c., 1867) accounts for the lack of monuments of the 15th and 16th dynasties by the invasion of the Hyksos. Bunsen agrees that they came in with the 4th king of the 13th dynasty, but they did not become legitimate sovereigns until the 17th dynasty. See Renan, quoted below at the beginning of the 6th lecture.) The actual solar disc fanatic who did the mischief was Axen-aten, who followed Thutmosis I. of the 17th dynasty, his mother being a foreigner.—Indigenous Races, Gliddon, 1857, p. 116.

† The Turkish dynasty of Ottoman sultans commenced in 1258.

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up from the seed in the waning of the moon they enjoy the repose of long, dark nights; if in the growing moon, their young life, over-stimulated, perishes, or suffers deterioration, more or less. The latest observations make it certain that the sun-heat reflected from the full-moon's face is sufficient to dispel clouds, and it must modify, therefore, notably, the climate of the kitchen-garden. One of the most brilliant astronomical discoveries of the last ten years is that of the so-called Eleven-Year Cycle, during which Jupiter and the other planets alternately collect upon one side of the sun, and then at other times disperse themselves around it; producing, in the one case, an abundant supply of spots upon the sun's disc, with a corresponding lowering of the climate of the earth; and, in the other case, the dispersion and disappearance of spots, and a higher mean temperature for the earth.

These are merely instances showing how the instinct of man may sometimes anticipate the final deductions of his reasoning faculties; and we are thus taught *to despise nothing*, not even the follies of superstition.

Still less ought we to despise the ancient worships of the sun and moon, inasmuch as our own notorious irreligion is due to an insensibility to the benefits which we receive all the time, and on all sides, from Nature, caused by our modern mastership of Nature. The slave-holder feels no gratitude to his slave; the magician cannot worship the devils who do his bidding; therefore I have always thought that the poet only showed his ignorance of human nature and of the tendencies of natural science, when he wrote—'The undevout astronomer is mad!' Ignorance has always been the mother of devotion. The man who can hold the solar system in his fist, and measure and weigh it with his scale and compasses, and predict with accurate certainty what its changed aspect will be a hundred thousand years beyond the term of his own appointed career upon the earth—this man may worship his wife, his emperor, his country's flag, his science, justice and honour, and the Great God of the invisible universe; but certainly not any heavenly object, nor even God on account of the mere wonders of His sky.

But in old times it was not so. The procession of planets went on to and fro with the mystery and grandeur of a

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procession of priests; and was so worshipped. The mysterious pole-star was the savage man's best friend, and the sailor's also. The dog-star, rising as the sun went down, just when the blessed inundation of the Nile promised a harvest for the coming year, came in, of course, for a large share of Egyptian love and reverence. Shepherds of Persia and Arabia had nothing else to do, whole nights, whole years, whole lifetimes, but to watch and wonder at the many-coloured, slowly-shifting stars. They saw the satellites of Jupiter without a telescope; and by dividing up a few hundred revolutions of each satellite by the number of nights of observation, they could arrive at its rate of motion to a minute of time. The strange diversity of names given to the constellations, the utter absence of any harmonious system in the zodiac or out of it, the purely fanciful and oftentimes inexplicable groupings of the principal stars, all go to show how many minds, in how many ages, helped the old astrology to assume the shape in which we know it now.

Comets were a terror to the ancients because their shape suggested war, and their flaming glare pestilence, rushing through the sky like warriors with dishevelled hair, and always at some epoch of convulsion, either during the invasion of some bloody conqueror, or at the death of some great leader. Volcanoes were, for the same reason, or rather by the construction of the same uninstructed fancy, made the abodes of malignant deities, personifications of those forces of nature not yet subjugated by man's intellect. High mountain-peaks, the inaccessible thrones of ice and snow, sources of thunder and lightning, avalanches, and devastating floods, became the homes of other gods, the enemies rather than the friends of man. But, above all, the all-devouring ocean inspired terror in the human breast, and this terror generated some of the widest-spread superstitions connected with the ancient mythologies. Serpent-worship, and Siva-worship, and devil-worship in general, can be distinctly traced to it, as I will show in a future lecture. The ship which carried man, and the stars which guided him across the trackless sea, became personified into his favouring * deities, and

* 'If, most venerable man! it is a disgrace and sin to forget God, it is also a stain upon the virtue, and a dishonour upon the judgment, of

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thus astrology linked itself with physical geography, as astronomy has done in our day, to much better purpose.

Let me touch, in passing, upon the curious etymology of the word 'star.' It is supposed to be explained by a Sanscrit root signifying *to stand*, in Latin *stare*, alluding, of course, to the immovable positions of the stars. But the use of the star-shaped diagram in astrology suggests another idea. The word for mountain is TOR, expressed in writing by a triangle, our letter D, the Greek Δ.* The symbolic star with six points (for the heraldic star with five points is not a star at all, but a mullet or spur), was made by crossing two triangles ✡, and called the Sacred Tor, S'TOR, and was used thus, abundantly, by the magicians and cabbalists, as the background or framework of their horoscopes. It seems to be one of those numerous implantations of a later astrological mythology upon an older pyramid or mountain-worship, with which I should be loth just now to interrupt the subject of this lecture.

Confining our attention to the group of sciences to which this lecture is devoted, it is plainly to be seen that their utterly embryonic condition in ancient times, and the abstract and cosmical character which they bear, make it unlikely that we can get from them many concrete facts respecting the earliest times of man.

I will begin with the science of Numbers. From what we know of the notation of savage tribes of the present day, we may infer with great certainty some of the intellectual conditions of man's earliest residence upon the planet. I leave to the next lecture the question how long man has lived upon the earth. I take for granted also this evening that his first appearance was in an undeveloped condition of mind. The ideas of number which savages of the present day possess are strangely limited: some of the lowest tribes cannot count above three; the Australians

any one, who has virtue and judgment, not to reverence you, who are a very target of wonders, into which the stars, contending in your favour, have shot all the arrows of their gifts.'—Letter of Arretino to Michael Angelo, in Perkins' Tuscan Sculptors, vol. ii. p. 50.

* See Rawlinson's picture of the hill Koukab ('the star') in his Babylon (about page 140). See also the fact that *sb*, a star ✡ means not only to *adore*, but a *gate* (or *door*). Bunsen, p. 537, Egypt, vol. i., 7th determinative.

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count only to four, and after that all numbers are to them merely *Kauwol-Kauwol*, 'many,' or *Bungu Galang*, 'very many.' Many stop at five; others count up to ten before they begin again. The Sioux Indians, Dr Hayden tells me, count upon their ten fingers and their ten toes, and call that one man; their first unit is therefore one, and their second unit is twenty. Pliny Chase has discussed this curious subject with great skill, to develope the fundamental ideas of the numbers on the basis of the names which are given to them in many languages. He finds that their very names show how feeble the mathematical faculty of the savage must be. In some of these wild languages even the word for three means two and one; four means twice two; five, three and two; six and eight mean the second three or the second four, &c.

Imagine, if you can, the barrier to mental development which such an embryonic notation must be. Think of the difference between making nine strokes, as the old Egyptian had to do, and writing our Arabic numeral 9. Progress in mathematical machinery was at first very slow; yet our cypher 8 is merely a more convenient form of the old Egyptian In some respects their notation seems simpler than ours, as when they represented 10 by , 100 by , 1000 by , 10,000 by , 1,000,000 by , and 1,000,000,000,000,000,000 by .

But it was not really so; for nothing can excel the utility and simplicity of our decimal system, unless it be a similar system with a decimal of 8, or 12, or 16, instead of 10. Any advance in true physical science was impossible in early times merely for want of some such counting machine. The first ages of humanity were devoted to darkness because all numbers beyond a score or a hundred were alike uncountable. In fact, there is a natural dislike to mathematics in the untutored mind; it brings too great a strain upon the intellect. You remember the Arab Sheik's reply to Layard's friend:—'Although I have passed all my days in this place, I have neither counted the houses, nor inquired into the number of the inhabitants. Shall we say,

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Behold this star spinneth round that star, and this other star with a tail goeth and cometh in so many years? Let it go! God will guide it.' This of itself is sufficient to explain the reckless chronologies of early days, and the unblushing coolness with which thousands of years were lavished on the reigns (or life-times) of half-a-dozen generations.

And yet, the occurrence of those immense numbers at the beginning of the Egyptian and Indian history hints to us the existence of some profound consciousness of an immense preceding antiquity, residing in the ancient mind. The old bards were aware that the race had been tens of thousands of years upon the earth, from considerations of architecture, and traditions, now lost, just as we have been made aware of it by considerations of a geological nature. Hence it was natural for them to make a rude calculation of the precession of the equinoxes, and fix the date of the beginning of the Egyptian empire at 35,000 years.

Now it is in taking up such rude calculations of the ancients, and making them more precise, and applying them with a cultivated common sense, that modern Mathematics and Astronomy find a chance to employ themselves about the question of the original conditions of our race. The discussions over the zodiac of Denderah, although they resulted in proving it to be a mere astrological diagram of no astronomical value whatever, and therefore useless to the historian, were still of use in opening up other and more fruitful resources. The fables of antiquity are often good ethnological guides, and some of these come within challenge of this mathematic group of sciences.

Take for an example one of Kepler's most happy hits. It is rather too modern an instance, for it relates to an event dating less than 2000 years back. But it is a fine illustration of the treatment which the modern sciences are prepared to give to any ancient record that may be brought under their notice. Kepler was engaged in calculating backwards the orbits of our two largest planets, Saturn and Jupiter, when, to his astonishment and great delight, he saw that one of their conjunctions, and one of the very closest and most splendid that they had ever had, happened, under the most favourable circumstances for seeing it, precisely at the birth of Christ, as given in

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the books. Of course the legend of the star in the East was at once explained in its most essential features.

In like manner, taking an example a few centuries farther back, the recalculation of the eclipse of Thales has become the starting-point of the chronologists in their rectification of the old Greek tables.

Going back much farther, some of the most important Egyptian dates have been obtained by calculating the heliacal rising of Sirius, and other stars, watched by the Egyptians on account of their connection with that vitally interesting event to them, the beginning inundation of the Nile. Much of that old mythology receives an easy explanation in this way.

I have just alluded to the use made of the precession of the equinoxes. A similar use is made of the ellipticity of the earth's orbit. A discussion is going on (at present) respecting the effect upon old climates, which a regular variation in the shape of the orbit of the earth must have produced. Laplace calculated the maximum and minimum of this ellipticity, and commenced the calculation of the length of time required to lengthen it out to its longest, and then to reduce it to its roundest, form. The subject has been taken up lately by others, to show that while the corrected mean distance of the earth from the sun is just now about 93 millions of miles, there must have occurred, at enormous intervals of time, periodically, such elongations and contractions of the orbit as to bring the earth during one season of the year within 85 millions of miles of the sun, and during another part of the year to carry it off 105 millions. This extreme ellipticity, however, must take place in a different direction each time, so that the closeness of the earth to the sun will sometimes coincide with the summer of the northern hemisphere, and sometimes with its winter. When it coincides with summer, then the northern hemisphere must suffer the most extraordinary variations of temperature, the absolute extremes of both summer and winter, during which it is hard to see how human life could be successfully preserved upon the earth. Such was the glacial epoch—all the glacial epochs. On the other hand, when the earth recedes farthest during summer, and approaches nearest during winter, in the northern hemisphere, the amount of

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heat received from day to day from the sun must be almost invariable round the whole year. Then reigns perennial spring. Then animal and vegetable life holds its millennial holiday. Such was the carboniferous era—all the carboniferous eras.

I did not mean this evening to touch upon the geological antiquity of man, reserving that for the next lecture, but you will see at once that this astronomical question of the ellipticity of the earth's orbit bears directly and heavily upon the date of man's origin. If the last maximum ellipticity happened, say 100,000 years ago, causing the last glacialism of the northern hemisphere, and if we can find any facts connecting that glacial condition of the earth with the remains of man, then the conclusions so derived must influence other lines of inquiry. And yet it is but one very little streak of light, mere candle-light, which astronomy throws in among the shadows of those Robin Hood and Robinson Crusoe days of mankind.

2. Another such glimmer of poor information is furnished by Physical Geography, the marvellously zealous and productive pursuit of which, within the present century, bears to the geography of the ancients about the same proportions, which the results of modern astronomy bear to the dreams of ancient astrology. To feel the full force of this comparison you need only lay upon your table the poor little sketch-map of Ptolemy; then spread abroad upon your floor the sheets of the Swiss, French, Swedish, or British topographical surveys. In the former all is monstrous and confused, not a latitude or longitude correct; not a line or part of a line in any portion of it representative of truth; the small is large, the large is small; and fancy fills up spaces where the scanty and untrustworthy reports of travellers have failed. In the latter every mountain-peak is established by a reference to some measured base line; every stream is traced with compass and level up to its tiny rivulets; every man's possessions are defined as if the entire map was but a recorded deed of purchase; his house, his garden, even the footpath which has at its stile the warning sign-board, 'beware of spring-guns,' is laid down. Four miles beyond the walls of the city of Bourges the geographers of France have erected a pyramidal monument which marks, with true French

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idealism but with French mathematical accuracy, the precise centre of France as it was before the annexation of Nice and Savoy. At every mile along the southern boundary of Pennsylvania, Mason and Dixon planted pillars of stone which still remain. On the top of Mount Desert, Wachusett, the Blue Hill in Milton, and a thousand other eminences along the Atlantic seaboard, stand the remains of the heliotropes of Hassler, Bache, and Borden, their relative positions determined by hundreds of thousands of observations, to the fraction of a linear foot.* Russia and India are being mapped with the same accuracy and particularity. Even the hideous deserts of Asia, and the hitherto inaccessible interior table-lands of Africa, are falling into shape under the analytical studies which Murchison and the men of the London Royal Geographical Society are incessantly making from the itineraries and sketches and astronomical observations of Mann and Livingstone, Burton and Speke, and Grant and Barr, and the brothers Schlagintweit, and a hundred other daring explorers, too many of whom have already paid the forfeit of their enthusiasm with their lives.

We look in vain for any analogue of this accurate science in ancient days.

It is true, Col. Vyse, Mr Turner, and the Astronomer Royal of Scotland, Mr Piazzi Smith, have published the most remarkable things concerning the great pyramid of Cheops. For, according to them, it must have been laid out, not by Benjamin Franklin's great-grandson, but by his great-grandfather, 250 generations removed. They find its base to be a precise aliquot part of the circumference of the earth. They find all its proportions to be geometrical and astronomical. The angle of its sides, the slope of its galleries, the distances from chamber to chamber within it they show to be obtainable by compass and scale. The granite chest in its central chamber, they say, is no sarcophagus: it is a vast standard bushel, containing

* Eight hundred counties in the Northern States have been mapped so as to show every house and the owner's name; and a complete set of these maps is preserved in the Library of the British Museum.

The whole valley of the Mississippi has been crossbarred by the surveyors of the government of the United States at intervals of six miles, north and south, east and west.

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precisely four English quarterns of corn. And, more than all, they think they prove that the builders of this gigantic *meter for all time* must have come from a distance (perhaps from Mesopotamia), in search of some such place as Memphis, where the relations of latitude could come harmoniously in among the other geometrical relationships which were to be made constants for all science, in this pyramid.*

However true all this may be, it goes but a short distance towards our purpose. It is certainly equally true that no practical applications of such sequence, if it really existed, was ever made in ancient times on any scale deserving of mention by a modern man. The maps which ancient Hindu and Chinese books contain are caricatures. The oceans, as we know them, were to the ancients a river coiled seven times round the entire world inhabited by man; or, at best, a rim of water round an island continent, up from which, and down again into which, the sun and heavenly systems rose and sank from day to day. A few grand thinkers had indeed concluded that the earth was not a circular plate, but a globe hung in space: but nothing came of this conjecture but that which was in its turn conjecture. The Chinese early knew the magnetic needle; but not how to work out their geography with it, in combination with the telescope and spirit-level. Each traveller had a different story to tell: the geographer was bewildered with their contradictory reports. The skein could never be unravelled, because the beginning of it could not be found; for the *sine qua non* of modern topography is a measured base to start with, and the ancients were not up to that, although their Euclid is our God of Cambridge. But Euclid is one of the moderns.

It is a very great pity that the ancient world has left us no records of physical geography to compare with our own observations. Had we correct hypsometrical tables of the heights of the Alps as they were 5000 years ago, what light that would throw, not only upon the rate and amount of the submergence or emergence of the European Conti-

* The beautiful application of physical science, in the double shape of the magnesium light and the sensitive photographic plate, to the elucidation of the ancient mysteries of the chambers and galleries of the great pyramid, should not be passed unnoticed.

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nent, but upon the migrations of its early inhabitants. Eight centuries ago, for instance, those dangerous passes in the Alps, which the traveller now can hardly find a guide to pilot him through, were common highroads of communication between the Swiss and the Italian villages. A succession of cold seasons lengthens all the Swiss glaciers sensibly, and increases the privations of the mountaineers. There was a time when the isolated glaciers of the Alps formed one; covered the whole watershed; spread its edges over the low lands, filled up the lakes, banked against the Jura, and probably connected themselves with vast sheets of ice and snow around the world, to the detriment, if not to an almost complete destruction, of sections of the human race. The science of Meteorology has much to teach us on this subject. Then there are all the questions of climate connecting themselves with the rise of mountains, the formation of new sea-currents by fresh volcanic submarine obstructions, and the spread and disappearance of great forests, all of them determining some fresh investigation into the earlier state of man, both in historic and in prehistoric times.

What we most miss and need are ancient records of these physical changes.

Had we even a rough outline of the delta of the Nile, made no farther back than the twelfth dynasty of the pyramid-builders, how much nearer we could come to the answer of that vexed question, whether Egypt was settled from Asia, or from Africa; whether the black man or the white man be the elder brother. If the Rig-Veda, instead of being a jumble of ceremonial hymns to fire and water, were a single tolerably well-constructed map of the valley of the Ganges, and the country behind the Sunderbunds, how much vain argument respecting the value of the Yug chronology and the antiquity of the Turanian tribes of the Ghauts and Deccan would have been saved! All science, to become efficient, must become comparative; this is its second stage. To settle the earliest history we need the combined efforts of comparative geography, comparative zoology, and comparative philology. But comparative geography, or, as we usually call it, Physical Geography, which, after describing the present status of the earth's features, argues back to what they have been, and seeks

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out both the laws which governed the change, and the effects which it produced upon living beings, especially on man—Comparative Geography is, after all, only one phase of Geology. I will therefore close this lecture here, and promise to take up in the course of the next the points which have been just suggested.

I shall discuss the Geological Antiquity of Man, as proved by his fossil remains, in connection with the relics of extinct animals; the proofs we have of great geographical changes during the human period; the value of various scales of years which geologists have endeavoured to apply to the residence of man upon the earth, and the ground of the now commonly accepted division of antiquity into three definite periods—the Stone Age, the Bronze Age, and the Iron Age. And I shall endeavour to make these *questions* clear by diagrams to the eye, although I may not be able to make their *answers* wholly convincing to the judgment of my audience.

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LECTURE III.

THE GEOLOGICAL ANTIQUITY OF MAN.

THE antiquity of mankind,—the dignity of mankind,—the unity of mankind:—these are the three great preliminary questions of ancient history. Three separate sciences take charge of them. The antiquity of mankind is a geological problem. The dignity of mankind in the scale of nature is to be chiefly decided by zoology, or comparative anatomy. The moot question of the unity or diversity of the race begins the studies of the ethnologist.

All three questions have been settled for us, as you are probably but too well aware, many centuries ago, by that 'science falsely so called,' Theology. And it really seems to be a work of clear supererogation to commence the investigation again. Are we not *assured* that the world is only about 6000 years old? That man was made on the sixth day of its existence? Does it not stand so written in the books of Moses? Do we not also *know* that man was created upright before he fell, and of a grade but little lower than the angels; and that his spirit goeth upwards, while that of the beast goeth downwards? All this is too distinctly written by holy men of old, who wrote as they were moved by the Holy Ghost, to be called in question for a moment. Even the smallest particulars are put at the service of our curiosity to be received with implicit faith:—how that God made one Adam first; then cast him into sleep, took from his side a rib and made a woman of it, and how, from these twain, sprang all nations, and peoples, and kindreds, and tongues, that dwell upon the surface of the whole earth, white and black, yellow and brown, dwarfish Esquimaux, and gigantic Patagonians, woolly-haired Melanesians and beautiful Greeks, Jews with great noses and Chinese with cat-like eyes, upon every con-

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tinent and in every remote island of the sea. The books of Moses are believed to inform us absolutely of these facts, in language as unmistakably plain as we could desire to have it; as plainly, in fact, as they inform us that the earth was made three days before the sun, thus settling for us the nebular hypothesis, and various other little difficulties, of an astronomical nature, which arise out of the rotation of the earth and planets, according to the Copernican system.

It is surprising how indifferent men of science seem to be to these great statements! Thousands of preachers proclaim them from the pulpit every Sunday in the year; and millions of communicants respond—Amen! And yet our men of science continue sceptical, and call them, as the apostles did, old-wives' fables. They believe them indeed to be old Jew-legends, so palpably heathenish and contrary to all we now know, that it is not worth while to try to show their absurdity. But they add, more seriously, that these old fables are no part of Christian theology; that they have been foisted into the body of Christian divinity to save the brains of the silly, to sustain the tyranny of the clergy, and to excuse the vices of the laity; and that they are already disappearing from the public faith so fast under the influence of public school-education, that no especial notice need any more be taken of them. It is a noteworthy fact that the books which periodically appear in the shops upon the Harmony of Science and Religion, or upon the Relations of Genesis to Geology, are written by clergymen; and all of them in the service of Jewish theology. All alike, men of science will no longer even read them, but look with as despairing an eye upon those who write them as Christiana's party did upon the man whom they found asleep upon the enchanted ground.

'And that place was all grown over with briars and thorns, excepting here and there where was an enchanted arbour,* upon which if a man sits, or in which if a man sleeps, it is a question, some say, whether ever he shall rise or wake again in this world. Over this forest therefore they went, both one and another, and Mr Greatheart went

* Viz. a pulpit.

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before, for that he was the guide; and Mr Valiant-for-Truth came behind, being rear-guard. Now they had not gone far, but a great mist and darkness fell upon them all. Wherefore they were forced for some time to feel for one another by words, for they walked not by sight. But any one must think that here was but sorry going for the best of them all; but how much worse for the women and children, who both of feet and heart were but tender. They went on till they came to where there was an arbour, wherein lay two men whose names were Heedless and Too-bold. Then the guide did shake them, and do what he could to disturb them. Then said one of them, I will pay you when I take my money. At which the guide shook his head. I will fight so long as I can hold the sword in my hand, said the other. At that one of the children laughed.'

Through this enchanted land men of science have learned to hurry on, without any longer even making such benevolent but futile efforts to awaken the sleepers in its arbours.

Let us start fair this evening with the discussion of the first of the three problems which I have mentioned, viz. the geological antiquity of man. To do this we must make up our minds to part company with the schoolmen. There is no alliance possible between Jewish Theology and Modern Science. They are irreconcilable enemies. Geology in its present advancement cannot be brought more easily into harmony with the Mosaic cosmogony than with the Gnostic, the Vedic, or the Scandinavian. It has escaped fully and finally from its subjection to the Creed. Sindbad has made the little red man of the sea, who sat so long on his shoulders, tipsy with new wine, tossed him to the ground, and crushed his wicked old head with a stone. Sindbad is free. Geologists have won the right to be Christians without first becoming Jews.

The arguments for any geological fact, which is at all a comprehensive one, are gathered only by years of patient and laborious observation, not in the closet, but in the field, the cabinet and the laboratory. A thousand fruitless journeys before success can crown the search! A thousand false hypotheses before the true theory is established! A thousand mistakes of observation published before they can get corrected! Consequently, the literature of the

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science is something enormous and appalling. Every new step in advance, while it becomes in one sense easier, in another sense becomes more difficult to make. Outsiders, charlatans, tyros, sciolists, have no chance at all. They must take everything on testimony. There was a time when the Dean of Westminster in his study could be a tolerable geologist. That time is past. No man who does not go out and grapple with nature, wrestling with this angel through the long dark night, receives the blessing when the sun is up. The knight who will take initiation into these mysteries, must make his vigil on the floor of the great church, equipped in full armour, fasting and alone, chaste, silent, brave. It is impossible for a mere reader of Lyell's Elements, or a mere listener to Sedgewick's lectures, to get that profound faith, that overpowering conviction of the reality of former creations, and of their incalculably great antiquity, which is as natural to the working field-hand in palæontology, as is his faith in the good God, or in his own past life. If I speak, therefore, dogmatically, to-night, you will understand that the great first truths of Geology have been so seen and touched, and tasted, that they are no longer speculations, but experiences; no longer objects of belief, but of absolute knowledge. Geology is *not* in its infancy; it has reached a ripe maturity. Its greater truths need no further testimony, no more copious illustration than they already have. And it is only of such that I will just now speak. Doubtful things will come up afterwards.

Before touching the antiquity of man, I must give you a clear conception of the immense antiquity of the earth.

If you see a stone house a-building, you know that the foundation walls were built first, and that the cut courses must have been laid in an ascending order. You know this with absolute certainty. The most direct outside revelation from God could not make it plainer, nor add to the force of your conviction. Nor could the worker of a thousand miracles before your eyes shake this conviction for an instant. Now, Geology is the science of this conviction applied to the crust of the earth, as an unfinished building of stone, the courses of which have been laid in successive days. It has its Metamorphic foundations, its Palæozoic surbase story, its stately superstructure of Se-

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condary and Tertiary rocks, and its Volcanic pinnacles. The workmen with their tools are still upon its highest scaffolding. The forms of Lapithæ and Centaurs fill all the metopes of its entablature. The pediment is even now receiving its Olympic synod in low and high relief. Created 6000 years ago, and in a single day! You might as well affirm that Cöln cathedral was begun and finished before breakfast yesterday. You might as well believe that other oriental story of Aladdin's palace.

Three points claim especial attention. The first point is the characteristic geological feature of *superposition*. The waters of the globe have been spreading one layer of sand and gravel over another, one layer of mud over another, one layer of limestone and marl over another, without intermission, without haste, with the greatest regularity, for many millions of years, until the whole thickness of such aqueous sediments as are known to us, amounts to no less than 16,000 fathoms, say 20 miles, from top to bottom. And when we remember that what we call the bottom of these sediments is no true bottom layer, but merely the lowest limit of our observations thus far possible, we feel ourselves at liberty to carry back the era of commencement to an indefinite distance.

The next point to be insisted upon is the division of the time, represented by this 20 miles of sediment, into four or five successive ages; and the subdivision of each of these ages into successive systems; each system into successive formations; each formation into successive beds; and each bed into laminæ or fine layers, no thicker in some cases than a sheet of foreign letter-paper. All these different ages are as well characterized by distinctive features as the ages of architecture are by different styles. No traveller thinks of disputing with a local archæologist while he is showing him the curiosities and beauties of a cathedral or abbey church, founded in one century, enlarged in another, partially rebuilt in another, and restored and beautified in his own day. There is no mistaking the Roman age of the towers of Jumièges, nor the Norman age of its roofless nave, nor the later date of its ruined pointed Gothic choir. A glance is sufficient to decide that the façade of the Chateau de Galliou could not have been designed by any architect who lived when the baths of

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Nero were put up. So a glance from the stage-coach is sufficient for the experienced geologist to tell whether he be riding through an old Laurentian or Huronian region, or among Palæozoic mountains, or over the later estuary sands of the New Red, or over the still more modern plains of the Chalk and Greensand formations. And this characterization of sediments of different ages is carried out in nature so completely, and to such minuteness of detail, that the good local geologist can recognize, by the very surface soil and incidental shapings of the hill-sides, upon what particular belt of one formation he is riding, whether the rocks around him belong, for instance, to the Upper coal measures, or to the Lower; to the upper, the middle, or the lower Silurian. You can easily imagine what an impression of *time* this makes upon the thoughtful mind.

The Hebrew legend of the creation describes the separation of the waters from the dry land as having been determined by a creative act upon the third day, and fixed for all time. The fact is, that no *fixed* relation of land and water has ever been established for the surface of the globe. From the beginning land and water have been exchanging places. Every acre of the land-surface of the earth, which geology has examined, bears indubitable marks of having been not simply overflowed, but actually created at the bottom of the ocean. And it is needless for me to tell this audience what proofs we have that every part of every coast of every ocean is, this evening, while I say it, either rising slowly from the waters, or sinking slowly into them. Can any phenomenon enhance more highly than this our ideas of geological time? Yet when we come to feel the full force of the terms Erosion, Denudation, as applied to the present surface of the earth, by which, through the slow wear and tear of centuries—millenniums—of fiery summer suns and wintry frosts, sedate glaciers and mad torrents, trickling rills and mouldering damps, sharp rootlets thrust in cracks and lichens softening the toughest rock, the very Alps have been wasted half away, and where once even mightier Alpine ranges ran, now nothing but a continent of rounded, grassy, forest-covered hills, remains;—still more, were I to give you proofs at hand of the repetition of this work in all the past ages of the world, and show you the wasted outlines of hills and valleys in the inside of the crust itself,

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fossil erosions, hills and valleys embedded like bones and shells under whole formations of rock sediment,—you would begin to feel the overwhelming weight of geological time, and be disposed to cry—'Tis but another name for an eternity.

I might illustrate this subject of erosion by many beautiful instances,—such as ravines a thousand feet deep through prismatic lava fields; caves which were once but one, now separated by a river with cliff walls; fissures filled with what was once rock-oil, afterwards dried into a vein of bituminous coal, and now exposed to view on both sides of a wide deep valley. If anything has taken time it has been this mouldering down of the successive surfaces of the planet.

The third point of prime importance is one that brings us close to the subject of our lecture. Every geological age has had its own different and special inhabitants,—its successive creations of life-forms. Each geological system, even each successive formation, has entombed the remains of millions of zoophites, plants and animals, peculiar to that particular stage of the earth's history, and to no other. I say nothing now of any supposed progression of ideas in the creative intelligence embodied in these forms: this would come in better shape before us in the next lecture. I argue nothing here for or against the theory of instantaneous creation; or the opposite theory of spontaneous development of one set of forms out of another. I wish to confine your attention just now to the established fact, that no geologist can possibly mistake Silurian rocks for Devonian, or Devonian for Permian, or Permian for Cretaceous, or Cretaceous for Postpleiocene, when he has once caught sight of even only a small collection of their fossils. Nature is no Brummagem manufacturer of old Greek coins or Pharaonic scarabæi to be re-sold to travellers at the foot of the Pyramids, or in the great hall at Carnac. In fact, as if to prevent the possibility of such deception, the truth-loving Creator has marked shells of similar shapes,* but of different ages, with such delicate but unmistakable variations of detail, that we must stand more and more amazed, not only at the infinite resources, but

* E.g. the microscopic dentation discovered by Agassiz in the interior lamellæ of one of two shells in all outward respects undistinguishable.

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at the inflexible integrity of his skill. Surely he designed that men should not deceive themselves.

Do you not see what a mistake was made by the fine old Hebrew poet who sang the Mosaic song when he separated the creation of the land and waters, from the creation of the fish and air-breathing animals, fixing the former on the third day, and the latter on the fifth and sixth? But let us do him justice. His is a poem, not a text-book. He could only see the phenomena of the world in the twilight of his times; but his genius grasped them, even thus half seen, in a poetic order, wonderfully like the actual. Nor was it possible for him to describe them, complicated as they are in nature. With the same ample grandeur, but without the horrors that surround the circular stages of Dante's Hell, he has resumed under seven heads the wonders of the universe; and the order of ascending worth which they bore in his own mind tallied with that which in the Divine idea compelled the successive stages of development in the history of the earth.

Conceive now the illimitable stretch of ages upon ages, occupied in the production, establishment, increase, decline, extinction, and substitution, of these grand ranges of successive worlds of vegetable and animal organisms, all perfect in themselves, all differing from one another, all harmonizing with the growing physics of the planet, and leading slowly, but surely, up to man. Could God have made all this at once? I speak not of a puckish, brutal Demiurge, fond of such practical jokes; he could. I speak of the Christian's God of truth, the loving 'Father who is in heaven.' Would it not have been a flagrant imposition upon intelligence,—a complicated and most flagitious forgery? Heaven could scarcely have devised such a barmecide feast to set before the hungry intellect of man.

Nor is the difficulty diminished by calling a day a thousand *years*. We have in palæontology the records of a thousand *ages*. Many of the old limestone strata are entirely made up of corals, and their triturated *débris*. Some of the old Devonian mud-rocks are mere masses of the casts of brachiopods, of every size from the youngest to the oldest. Some of the coal-measure shales are leaved

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like a book, and every leaf glistens with delicate fresh-water shells. In the Deep-river basin of North Carolina millions of fish-teeth lie packed away between two layers of coal which lie but two feet apart. There are more than a hundred beds of coal in a single coal-system, each of which is the result of the growth of a peat-bog, swamp, and forest, of a separate age; to say nothing of the many fathoms of rocks which intervene between each one coal-bed and the next in order over it; during which long interval of time the land must have been too deep beneath the water level to permit of vegetation.* The fossil dung of the fish which swam the seas during the deposition of the chalk of England, was so abundant, that the farmers about Cambridge collect it, as it is set free from the mother-rock by denudation, and use it to manure their lands.

Professor Heer, of Zurich, has lately published, in his admirable Geology of Switzerland, a minute history of one single formation, only 36 feet thick, which he divides into 18 beds. It tells a striking story of change and time, which we need only multiply by thousands to get some adequate notion of the antiquity of the earth.

Until about 30 years ago the great geological question for those who busied themselves with the higher problems of life was this: Why do not the remains of man appear among the fossil treasures of the earth? Here the theologians always had the geologists upon the hip. If the earth is so old, they triumphantly clamoured, why does not man share in its antiquity? Show us a fossil human bone —a fragment of his skull; a single tooth will satisfy us, if it be imbedded fairly in one of your fossiliferous rocks.

To this there was but one reply: Wait!

The ethnologists, the archæologists, the egyptologists, were in the same predicament, and shared to some extent in the embarrassment of the palæontologists. They had

* There are reasons, in my opinion, to believe that many of the intervals, where they consist of sand, were rather raised above than lowered into the water. The calamites, rooted at different heights in the sandy strata of the Glass Bay coast of Cape Breton, seem to argue in that direction. Either emergence or submergence would necessarily put a stop to a coal-bed's growth. Probably both explanations are equally admissible in their proper places.

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found human skeletons in ancient caves, mixed with bones of animals, some of them foreign to the countries in which the caves existed. But there was no date to be assigned with any certainty to these ossuary deposits; there was no proof positive that they were not swept into these caves by comparatively modern freshets. It was easy to assert, and hard to disprove, that the caves were not the habitations, or at all events places of refuge, for the early races of mankind, and that these fed upon the animals whose bones were mixed with their own skeletons; or, on the other hand, the caves might have been the dens of hyenas, whose bones were found in some of them in great numbers; and it was reasonable to suppose that these predatory creatures might have added human victims to the other evidences of their omnivorous rapacity. The whole phenomenon was one of such complexity and difficulty that it required a long examination. These caves were discovered one by one in England, in France, in Sicily, in Brazil, in fact, in all countries which contain limestone regions. They are very numerous; they differ much in the number, kind, proportion, and condition of their fossils; but they almost all agree in one principal feature—their bones are preserved from atmospheric decomposition by deposits of carbonate of lime, slowly introduced by the infiltration of waters through their roofs, forming stalactites above, and a floor of stalagmite, which covers a red earth, in which the bones are buried. The *bones of man* were rare compared with those of other animals; but, on the other hand, the instances of the discovery of marks of the *presence of man* were numerous, and the number of stone and flint implements collected from all the caves was very great. Yet it is not too strong an affirmation, that after all the researches of Buckland and Lyell, and Tournal and Schmerling, no one was satisfied how the thing would turn out; what the age of the caves, or of their contents, might be; or what relation the human relics really might bear to the remains of animals with which they were intermixed, or to the geological sequence of aqueous formations constituting the crust of the earth. The individual explorers had their own opinions, but the world of science, watching their labours, was not satisfied.

Buckland published his Reliquiæ Diluvianæ in 1823, in which he discussed the whole subject of organic forms

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found in the caves, the fissures, and the gravel-beds of England, and concluded that the human remains which he had found therein were *not* so old as the accompanying fossils. It was a *theological* conclusion, and was accepted with delight by the conservative science of England. Indeed, it remained a shibboleth of geological orthodoxy in England *until about seven years ago*,* when the acceptation of a new series of discovered facts on the Continent broke down the bigotry of the British school, and a general stampede of the younger geologists took place to the other side of the question.

In 1828, that is, five years after the appearance of Buckland's book, two French gentlemen in the south of France, MM. Tournal and Christol, examined and reported on †bone caves at Bize, and at Pondres near Nismes, in the Valley of the Gard. They had found human bones and teeth, fragments of pottery in two styles, pointed bones and flint hatchets and arrow-heads, cemented in a mud breccia *with living land shells*, and the remains *of both recent and extinct animals*, such as the hyena, rhinoceros, stag, antelope, goat, Lithuanian Aurochs and Lapland reindeer, the last of which is almost everywhere found associated with the mammoth of France in ancient alluviums and cavern muds. These gentlemen also thought they perceived unmistakable evidences of a time arrangement, or stratification of the remains, such as quite set aside the idea that the human relics were introduced subsequently.‡

But there were Bucklandites in France also. M. Desnoyers pointed to the *Druid tumuli* and dolmens of the primitive inhabitants of Gaul, under which he had found quantities of such flint hatchets and arrow-heads, pointed bones and coarse pottery, mingled with the sacri-

* Although Priest M'Enery had early found flint tools under stalagmite in Kent's Hole, near Torquay; and Godwin Austen had published in Trans. Geol. Soc. (vi. 1842), flints widely distributed in loam under the Kent's Hole stalagmite. In 1858 the new Brixham Cave was examined by the Royal Society, and made Prestwich and Falconer antediluvianists.

† Annales de Chimie et de Physique, p. 161, 1833, Christol. Notice sur les ossements humains des cavernes du Gard. Montpellier, 1829.

‡ Lyell, Antiq. of Man, chap. iv. 1863.

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ficial bones of deer, sheep, dogs, wild boars, oxen, and horses; but no elephant, rhinoceros, hyena, tiger, or other extinct species found in caves, had ever shown that these aboriginal Celts had been their contemporaries.*

In 1833 appeared the great work † of Dr Schmerling of Liège, in Belgium, who had been devoting several years to the exploration of forty caverns in the valleys of the river Meuse, the stalagmite floors of which had never before been broken up. Here, mingled indiscriminately with extinct bear, hyena, elephant, and rhinoceros, and modern beaver, cat, wildboar, roebuck, hedgehog, and wolf, above them and below them; and in the same degree of preservation in all respects he found the rolled and scattered bones of men. None of the common marks of burial were seen. None of the bones were gnawed, as if by animals. No coprolites, or fossil dung, of predatory beasts were found; the caves had not been dens. The osseous stratum was an undoubted aqueous deposit, brought into the caverns, through fissures communicating with the surface. Thousands of snail shells, and one snake, a few fresh-water fish-bones, and the bones of several birds, led to the same conclusion.

In the Engis cave, eight miles S.W. of Liège, fragments of three human bodies (chiefly skulls) were found. The now celebrated Engis skull lay buried, five feet deep, in the mud beneath the alabaster covering, along with a rhinoceros tooth and reindeer bones.

In the Engihoul cavern opposite, remains of at least three bodies were discovered, chiefly belonging to the arms and legs.

The Chokier cavern, two and a-half miles S.W. of Liège, afforded many fragments of the bodies and limbs of bears, but skulls were rare; in other caves bear-skulls were numerous, and trunk and limb bones rare; at Goffontaine all parts were in proportion. In the Chokier cave he found a polished bone needle with a hole pierced through its base for an eye. Another cut bone was found in the

* Desnoyer, Bull. de la Soc. Géol. ii. 252. And S. V. Caverne, Dict. Univ. d'Hist. Nat. Paris, 1845.

† Recherches sur les ossements fossiles découverts dans les cavernes de la Province de Liège, 1833-1834.

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Engis cave; and rude flint instruments, distributed through red loam, were common in all the other caves.

Mankind were obviously then contemporary with the extinct carnivora and pachyderms. So much was certainly made out. But still, it had not been proved that these tropical creatures had ever lived in Europe. Schmerling imagined therefore (that panacea for all geological difficulties) a cataclysm or deluge, of undetermined date, which had swept their bodies over from Africa, to bury them upon the shores of the Northern seas. Whether they had first been left as a diluvial deposit on the surface of the land, and afterwards found their way into the caves, he did not undertake to determine. And he still further puzzled the whole question by asserting, that among the various remains of other animals, he had found those of the South American agouti, which, however, afterwards turned out to be those of an extinct species of French porcupine.

Eight more years passed in fruitless speculation; during which the patient Belgian continued to be let down by ropes from the top of the crags, which make the valleys of the Meuse the most picturesque in the world, and to crawl on his hands and knees, pick in hand, through the dripping caves and fissures, which penetrate the Devonian limestone in every direction; visited by geologists and archæologists, from all parts of Europe, who could only tell him stories of similar discoveries, made by themselves in other regions, but nothing new; nothing to shed light upon his splendid cabinet; nothing to solve the riddle by. Then Isis smiled upon her puzzled priests, lifted another corner of her veil, and made a new suggestion. The answer to the conundrum began to shape itself at last in intelligible words.

It was now 1841, when an old antiquary, walking out from his chateau in the little city of Abbeville, through which the highway runs from Boulogne-sur-mer to Paris, where it crosses the river Somme, watched one day workmen shovelling gravel from the quarries on the heights beyond the city walls. Among the fantastic forms of flint which they threw out, his quick, experienced eye detected, as he thought, one that looked unnatural. He picked it up and looked at it more carefully. Could he be mistaken? Had he not seen such in cabinets of anti-

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quities? The more he looked at it the more he was convinced that it had been tampered with; in fact, manufactured by the hands of man. Yet how could that be? He asked the workman to show him the exact spot from which it had been shovelled. It was a bed of waterworn and broken flints, deep beneath the surface, covered by a deposit of loam, several yards in thickness.* None of the other flints showed the same marks. They were rounded, except where broken across, knobbed like potatoes when they grow in a bunch attached together, and coated with a crust of dull white substance due to the decomposition of their surfaces. The piece he held in his hand, on the contrary, was of a regular shape, chipped to an edge on both sides, and brought to a point at one end by the loss of a multitude of little flakes, such as no attrition or percussion in running waters could possibly effect. The other end was round and still retained the dull white crust which characterized the unmanufactured flints among which it had lain embedded. He took it home. He went into his museum. He compared it with stone hatchets, arrow-points, spear-heads, chisels, and pointed tools of various kinds which he had got from the Druid barrows and dolmens of Normandy. There was no mistaking its resemblance to these works of human art, some of which were more carefully prepared, and were even polished; but others of them were quite as rude as the one which he had found.†

Here then was a discovery! But he was enough of a geologist to see all its difficulties. He must be still more sure that it was a genuine inhabitant of that bed of flints beneath the bed of loam. Nay, his specimen would be laughed to scorn if he presented it to the learned world by itself. All the world would say that he had dropped it

* For a section and description of this famous locality, see Lyell's Ant. of Man, p. 135. See Prestwich's section of the valley in the Journal of Geol. Soc., London. For section of description of Menchecourt quarries see Proceedings of Amer. Phil. Soc., 1864.

† There are also deeper cavities flaked out for the ends of the thumb and index finger to be noticed in many of these tools, while some are shown in this way to have been used alternately or at pleasure by grasping either end.—See also Mr Ramsay's testimony, in Lyell's Antiquity of Man.

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accidentally from his pocket in among the *débris* of the quarry, even if politeness or good nature prevented a more damaging insinuation. Perhaps some workman had picked it up upon the surface of the ground, and dropped it in the quarry. All cabinet collectors know how often specimens get into wrong boxes. All geologists know how easy it is to mistake the situation of a fossil. He must find more of them, or say nothing more about it.

For six long years Boucher des Perthes became as sedulous a hanger-on about the quarries in the valley of the Somme, as any seedy old nobleman in the Quartier Latin about the Luxembourg. And he was rewarded. As the workmen advanced the headings of their pits, and opened back the flint bed, which had the loam above it and the solid chalk below it, the antiquary stood by (or his servants for him when he was sick), and selected out the manufactured flints, one by one as they appeared. He fed the workmen themselves to vigilance. When a flint instrument appeared they would leave it in its place and send for the old crazy man, as they thought him, to come from the city and take it out of its long resting-place himself. The number thus obtained was immense. At last he could contain his knowledge no longer. He took a thousand of them up to Paris, and showed them to the Academicians. But what did these men know? It was a favourite jest of a French wit that all the science of the Royal Academy of France was in the head of its 41st member. It had but 40 members. Boucher des Perthes was as much the old crazy man at Paris as at Abbeville.

In 1847 he published the first volume of his great book, Antiquités Celtiques, in which he gave a full account of his discoveries, calling them antediluvian, because they were made in the bottom layers of what all geologists had called the great Diluvium, or Diluvial Drift, taking their terminology from the science of the Middle Ages, based on the stories of the Sacred Scriptures of the Jews. His account produced no impression. It was puzzling enough to solve the riddle of the caves; this man had proposed a still more tremendous problem: how the remains of man came to be buried in the rocks themselves. The easiest way was to ignore the whole affair. Some denied that the tools were anything more than natural fragments. Others

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denied that they were found 30 feet beneath the surface. Elie de Beaumont, the disciple of Cuvier, and the head of the geologists in France, reasserted Cuvier's opinion that the old gravel-beds of the valley of the Somme had slipped down the hill-sides to their present situation; therefore he did not care whether the flints were manufactured or not; whether they were found 30 feet below the surface or not. The quarries were only worked in winter; nobody in his senses would leave Paris in winter-time to prove the assertions of a provincial antiquarian, whose whole story was improbable, and if true would upset all preconceived opinions. Even Dr Rigollet, who lived in the same valley, at Amiens, not 30 miles from Abbeville, and who had written in 1819 a memoir on the fossil mammalia of the valley, took no pains to verify his neighbour's facts for more than three years after the Antiquités Celtiques appeared in press, but denied them heartily, until he one day paid Boucher des Perthes a visit, and returned to his own home only to find similar evidences of man's early existence in its immediate vicinity; nor did he publish his recantation for four more years, after he had made a large collection for himself.

And so the matter rested. Boucher des Perthes went on collecting specimens, and enlarging and arranging his cabinet, biding his time. It came at last. He is now the great man of the day in geological archæology; for, like Linnæus, and Cuvier, and Lavoisier, and Hunter, he has started one of the sciences on a new career. Let no man doubt his own genius! it is the suicide of immortality!

The final impulse came at last, not from Germany, the land of abstract ideas, nor from France, the land of wit and mathematics, but from conservative, plodding, snobbish, prosaic old England, the land of tardy, ungraceful, but staunch, indomitable love of justice and the truth.

It had got to be now 1858, when the mouth of a new bone-cave was discovered at Brixham,* five miles west of the old Kent's Hole,† and the Royal Society deputed its two most

* Three or four miles west of Torquay.

† One mile east of Torquay. In this cave Priest M'Enery had found about 1830, in red loam under stalagmite, mammoth, tichorine rhinoceros, cave bear, &c. &c., with flint; and Lyell thinks he was only prevented by his respect for Buckland from expressing then his conviction that these were contemporary fossils. (Note on p. 97 of Lyell's Ant. of Man.)

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famous diluvial fossil hunters, Mr Prestwich and Dr Falconer (returned from a glorious career in India, and now, alas, lost to us, just as he had become one of the masters in our Israel), to examine it. They came,—they saw,—and they were conquered. The united length of five galleries, cleared and examined, was several hundred feet. Their width nowhere exceeded eight feet. Sometimes they were filled to the very roof with gravel, bones, and mud, the latter always covered with stalagmite, from 1 to 15 inches thick, itself sometimes containing bones, e. g. a perfect antler of a reindeer, and an entire humerus of a bear. The loam or bone-earth under it was from 1 to 15 feet in depth. The gravel at the bottom contained no relics, and was sometimes more than 20 feet in depth. No human bones were found, but many flint knives, chiefly in the lowest part of the red loam, one of the most perfect having 13 feet of bone-dirt over it, and some of them found directly underneath the extinct forms embedded in the stalagmite covering, and therefore necessarily of an older age. To add certainty to the date, a perfect knife was found close to and on a level with the left hind-leg of a cave-bear, which had all its parts arranged in such complete order, that they must have been held together by the tissues, when they were floated into their resting-place beside the knife.

One more step taken, and Boucher des Perthes was vindicated and revenged. The step had to be taken. The explorers could not help noticing that the country about the Brixham cave had suffered great changes to permit the cave to be thus filled. The valleys had been lowered at least 60 feet since the introduction of the gravel to the cave. Then, a strong stream ran through it, rolling stones along. As the waters became more quiet the red mud was deposited; finally, the alabaster drippings had their day, interrupted by recurrences of rainy eras, of unknown duration. The geological age of the deposit was therefore immense.*

Dr Falconer, shortly afterwards, on his way to Sicily, stopped at Abbeville, and wrote to Mr Prestwich that it was now high time to do something about the much-dis-

* See Lyell's discussion of the change of climate, based on the character of the *Cyrena fluminalis*, and of the change of sea level, Ant. Man, pp. 143, 177.

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puted flints of Boucher des Perthes. Immediately a crowd of people, John Evans, Mr Flower, Sir Charles Lyell, Prof. Rogers, Mr George Pouchet, M. Gaudry, M. Hébert, Desnoyers, Quatrefages, everybody, now rushed down to Abbeville, to St Acheul, to Rouen, and to other places in the valley of the Somme, to pick out flint implements with their own hands from the diluvium. Soon a trade sprung up between the quarrymen and travellers of all kinds. The demand began to exceed the supply. The workmen made experiments, and finding themselves as good as savages, forged ancient knives with modern hammers out of the diluvial flints. The cabinets of Europe and America became stocked from Moulin Quignon and Menchecourt, and the whole valley of the Somme fell once more into disrepute.

But the whole thing was now *un fait accompli*. People were at last convinced that man was no exception to the fossil world. Englishmen, who had fought so long against the ante-diluvial age, spread themselves through the libraries of Oxford and Cambridge, and over the bogs and deltas and downs of Great Britain, only to discover similar worked flint deposits in diluvium with extinct animal remains, in many places themselves, and records of such discoveries by others more than two centuries before.

A new impetus also was imparted to the exploration of new caves, which is still carried on with unabated energy and fine results. I have already tasked your patience too severely this evening to impose upon you further, even a rude sketch of what these last seven years have produced: the labours of Lartet in the south of France; the discovery of the Neanderthal skull; the explorations carried on in the lake villages of Switzerland; the cleaning out of a great fissure in the Gibraltar mountain, and the curious skeletons found therein; the discovery of human bones in the diluvium of Abbeville;* the claim of Desnoyers to

* For the discussion on the jaw, see Quatrefages in the Contes Rendus Lyell, Vogt, &c. In the Bullet. Soc. Géologique de France, xxviii., Nov., Dec., 1864, p. 93, M. de Mercey refers to the discovery of the jaw, 28th March, 1863, and subsequent discoveries by Boucher des Perthes of others at the base of the diluvium and in the top sand-layers. He adds that he himself, with Dr Dubois and M. Buteux, saw others taken out from the base of the deposit, July 16th, 1864; and with Boucher des Perthes, Dubois, and Réné Vion, Sept. 27th, 1864, a metacarpal bone and left index per-

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the determination of *tertiary* human relics, far older than the *post-tertiary* flint instruments of St Acheul and Abbeville.* Some of these topics should come up again in my next lecture, on the comparative dignity of man.

But I cannot close to-night without making certain that the gist of the question, of man's comparative antiquity, is clearly understood. It is not a question of a definite number of years. No geologist pretends to fix an exact date to any event in geology. It is one of the comparative sciences, essentially so. The difference between tertiary and post-tertiary counts for almost nothing in the entire column of formations which compose the crust of the earth, as the tabular view next page will show. Yet it is immense, enormous, shocking to the mind of man when applied to his historic life on earth. It is considered a triumph of discovery when we succeed in finding a reptile, or a fish, or a plant, in a subordinate formation only one degree older than the oldest stratum in which as yet we have discovered it. The whole creation has seemed as if creeping backward,—downward in the column of rocks, backward in the ages,—by such discoveries, annually, nay, daily, made by that busy crowd of lonely explorers whom, if we had Uriel's eyesight, we might see creeping, and climbing, and hammering, and picking, and pocketing for home examination, note-book in hand, dispersed all over the civilized, and here and there to be descried in the most remote corners of the uncivilized, world. These men are poets, working out the rhymes and the rhythm of that great psalm of life, which is to be sung in chorus when all work is done; when the young men will have *much* to say to

fectly preserved, ascribed by Gaudry to an adult man of ordinary size. His whole paper, pp. 69—104, is full of interest; it is entitled, Note sur les éléments du terrain quaternaire aux environs de Paris, et spécialement dans le bassin de la Somme; par M. N. de Mercey. It is illustrated with numerous excellent sections, &c. Also Troyon's L'homme Fossile, p. 30.

* I say nothing of the human pelvis found at Natchez, and too confidently accepted by Sir Charles Lyell (p. 200), because grave doubts still hover about its authenticity. But while putting these pages to press the news from Paris was received that at the meeting of the International Anthropological Society in that city in August of this year, 'two memoirs due to the Abbe Bourgeois and the Abbe Delaunay have established beyond doubt, that man was already in existence at the epoch of the Lower Pleiocene.'—See also Lyell's discussion of the Lava Man of Denise (Ant. Man, p. 194).

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*Lyell's Tabular View of the Fossiliferous Strata.**

1 Recent		Post-tertiary.	
2 Post-pliocene			
3 Newer-	pliocene	Tertiary or Cainozoic.	
4 Older-			
5 Upper-	miocene		
6 Lower-			
7 Upper-	eocene		
8 Middle-			
9 Lower-			
10 Maestricht beds		Cretaceous	Secondary or Mesozoic.
11 Upper-	white chalk		
12 Lower-			
13 Upper-	green sand		
14 Gault			
15 Lower-			
16 Wealden			
17 Purbeck beds		Jurassic	
18 Portland stone			
19 Kimmeridge clay			
20 Coral rag			
21 Oxford clay			
22 Great Bath-	oolite		
23 Inferior-			
24 Lias			
25 Upper-		Triassic	
26 Muschelkalk			
27 Lower-			
28 Magnesian limestone or Permian			Primary or Palæozoic.
29 Coal measures		Carboniferous	
30 Carboniferous limestone			
31 Upper-	Devonian		
32 Lower-			
33 Upper-	Silurian		
34 Lower-			
35 Upper-	Cambrian ? = Huronian		
36 Lower-			
37 Upper-	Laurentian		
38 Lower-			

* Antiquity of Man, p. 7. The Huronian and Laurentian are added to complete the column.

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the prophets that will astonish them. And nothing will more astonish them than what they shall hear sung of the antiquity of the race which they belonged to, and glorified, but which they imagined had been created only two or three thousand years before their individual selves.

I said, no scale of years! I must modify the expression. I should have said no scale of years in a condition to be used. Imagine a corps of detectives, belonging to the secret police, excited by the news of the commission of some masterpiece of felony, and stimulated by professional zeal, ambition, and the hopes of a large reward, who have come upon the trail of the criminals, have found traces of their work, have collected a little heap of letters torn into minute fragments by the rascals, and are now sitting round a table sorting the tiny shreds, all crumbled up and half illegible with lying in the mud. See them examine piece after piece and utter a suppressed exclamation when they detect a part of a word that they can recognize! See them lay the ragged edges of a dozen of them together and shift and turn them about until they fit and form a larger piece! See them hand their odd pieces across the table to each other, that what one man cannot use another may be more fortunate with! Until the hours go by, and the documents begin to assume a form, and the handwriting begins to make sense, and the key is got, and they break up the midnight party, tired, but jolly, and masters of the evidence that shall hang the rogues!

Such, if you will believe it, is the condition of the scale of years, which (originally, perfect and abundant evidence of the work which sunlight and moon-attraction have been doing on the surface of the earth) has been all torn to pieces, defaced and covered up by the same cunning sun and moon,—is now being picked up and washed and put together and restored by the geologists. The rings of bark in trees submerged in deltas; the rain-drop, worm-trail, footstep impressions, left on the thin laminæ of tidal estuary mud; the growth of peat in ditches cut for fuel at the present day; the wear and tear of basaltic columns against which abut the arches of a Roman bridge; the number of lava currents and intervening vegetable moulds over buried cities; the height of belts of teredo holes around the columns of Jupiter Serapis at Baiæ; the

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annual rate of emergence of well-known boulders in the waters of the Gulf of Bothnia, and of submergence of the missionary villages of Greenland;* the measurement of the three arches of black mould in the railway cutting through the cone of the Tinière in the Canton de Vaud, the upper arch containing iron relics of the Roman age, the middle arch containing bronze relics of the copper age, and the lowest arch containing only hammers and arrow-heads of the stone age, and calculated by Morlot to be from 5000 to 7000 years old; the rate of growth of successive layers of cypress forests found in probing the plain of New Orleans; the rate of growth of the concentric coral reefs of Florida; the annual rate of increase of the Nile sediment obtained by many scores of borings, made across the valley; the rate at which old Sanscrit books inform us of the settlement of the valley of the Ganges, and the filling up of the marsh lands of Bengal;—all these and many more are fragmentary shreds of a scale of years, which we hope some day to put together, so that we can read and use it to determine the length of time between the close of the tertiary era and the present day; between the close of the tertiary era and the glacial drift; or if nothing more, the date of the glacial epoch itself, *previous to which* it seems that man existed on the earth.†

* Here would come in the whole subject of *terrace formations*, much too extensive a theme to be meddled with in a lecture. See, for example, those of Quain Clubbe, in Lyell's Antiquity of Man, p. 240. See also J. F. Campbell's Frost and Fire, i. p. 357. Lond. 1845. Lyell's Principles, xxx. ch. Chambers made the Quain Clubbe terraces respectively, 56, 65, and 155 above the sea; but at Trondjim there is one 522 feet above sea-level. According to Celsius and the ancient geographers, Scandinavia was an island after the time of Pliny and before the 9th century. (Lyell, p. 52.)

† But Lyell seems to assert the contrary, when he says (Antiq. Man, p. 241), 'This period [of continental ice], probably anterior to the earliest traces yet brought to light of the human race, may have coincided with the submergence of England.' 'And the accumulation of the boulder-clay of Norfolk, Suffolk, and Bedfordshire' (p. 218). On the other hand, it is very evident from Heer's account of the Utznach (Zurich) peat-coal beds (in his Urwelt der Schweiz) occurring, as they do, between two boulder-clay formations, that there were two separate glacial periods with a modern climate period intervening. So too the Sahara seems, by Desor's account of Marés's discoveries of fresh-water shells (planorbis) 92^{m} down the artesian wells, to have been twice submerged, to correspond with the two glacial eras. Desor shows by the New Zealand glaciers, &c., the improbability of any *universal* glacial era.

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In conclusion, I will adduce one more such fragment. It is not only a remarkable example of the method to be used, but to show you how well based our hopes must be. It is, in fact, the latest, the finest, and if it were proved genuine, an absolutely perfect demonstration of the great antiquity of man. It is not in any of the books; I trust that M. Agassiz on his return from South America will be able to set before us its full value. I obtain it through my friend, Dr Henderson, of the United States navy, himself an experienced geologist. But the actual observer of the fact was a Naturalist of Rio Janeiro, Dr Ildefonso, formerly well known to the scientific world.

Dr Ildefonso, with his amiable daughters, had been amusing themselves for a number of years before Dr H.'s visit, in exploring the stalagmite caves which are scattered over a considerable region around the harbour of Rio. He had obtained a multitude of fossils from a bone-clay beneath the stalagmite floor, similar to that which characterizes the ossuary caves of Europe. Among these fossils I understand that he had found the vestiges of man. But the important point lies here. The stalagmite deposit over the bone-mud is not an amorphous and irregular plate, as it necessarily must be, in climates like ours, where rain falls at all seasons of the year, and the dripping of carbonated waters from the roof must needs be, therefore, continual. The climate of the tropics is humid only half the year and dry the rest. Consequently the alabaster of Brazilian caves shows annual laminæ of growth, analogous to the ring-growth in trees. Now Dr Ildefonso asserted that he and his daughters had repeatedly counted these annual layers and found them number as high as twenty thousand.

I leave you to draw the inference. Agassiz estimates the age of some fragments of a human skeleton, which Count Pourtalis found embedded in a coral reef in Florida, at 10,000 years.* Dr Dowler estimates the age of a human skeleton found beneath the fourth cypress forest at New Orleans at 50,000 years.† The borings of Linant

* The southern half of the peninsula is post-tertiary, and Agassiz says 135,000 years were needful for its formation. See Nott and Gliddon, p. 52.

† Types of Mankind, p. 352.

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Bey brought up works of Egyptian art from a depth of 72 feet, which M. Rosière estimates at 30,000 years. If Girard's estimate of the growth of the Nile mud be considered more correct, the burnt bricks found to the depth of 60 feet below the surface in the borings of Hake Kyan Bey must have been 14,000 years old. Yet these are mere modern alluvions compared with the diluvium of Abbeville. And this again can bear no comparison in antiquity with the least ancient of the true tertiary strata. My own belief is but the reflection of the growing sentiment of the whole geological world—a conviction strengthening every day, as you may with little trouble see for yourselves, by glancing through the magazines of current scientific literature—that our race has been upon the earth for hundreds of thousands of years.

In what condition I will endeavour to suggest in the next lecture.

But as I have given a general scheme of formations on page 62, and as I have referred repeatedly to the fossil species with which the remains of man are found in the ossuary cave mud and the diluvium, I shall add here the latest classification of the subdivisions of the human epoch, based on contemporary animal remains, and given by Prof. E. Renevier, of Lausanne, in a note supplementary to the posthumous work of M. Troyon, entitled *L'homme fossile*, and published in July of 1867.

M. Lartet distinguishes four ages of mankind:—1. the age of the great cave bear; 2. of the elephant and rhinoceros; 3. of the reindeer; 4. of the aurochs.

M. Troyon, following M. d'Archiac, describes in his chapter of the four epochs of the age of Stone:—1. the epoch of the great bear; 2. the epoch of the mammoth; 3. the epoch of the reindeer; 4. the epoch of the Urus.

M. Renevier's scheme is as follows:—

I. Epoch Anté-glacial, in which man was contemporary with the *Elephas antiquus*, *Rhinoceros hemitœchus*, and *Ursus spelæus*. During this period man has not been proved to exist in the Alpine regions of Europe.

II. Epoch Glacial, during which man was contemporary with the *Elephas primigenius*, *Rhinoceros tichorhinus*, *Ursus spelæus*, &c. Switzerland desert and covered with glaciers, to the exclusion of man.

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III. Epoch Post-glacial, during which man, contemporary of the *Elephas primigenius* and *Cervus tarandus*, had approached the Alpine countries as near as Schussenried in Wurtemberg.

IV. Epoch Actual, during which man had penetrated Switzerland, with the *Cervus elaphus, Bos primigenius*, &c., and begun to construct plank villages, on piles, in lakes, which had the same water-level as at present.

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LECTURE IV.

ON THE DIGNITY OF MANKIND.

MAN walks enveloped in the mystery of his own existence. How he exists he knows not. Why he exists he can only conjecture. What he is, is the last question ever answered to his satisfaction, by God, by nature, or by his own heart. All philosophies have been poor inventions to manufacture weak replies to it. To-night we stand as helplessly aghast at our creation as if no generations had preceded us. We look into each others' faces and wonder how it comes that we are formed erect, intelligent; while things around us creep, or swim, or fly, speechless and servile.

Out of this wonderment has sprung the science of Comparative Zoology. Anxious to know ourselves, we turn from side to side to examine curiously the living creatures in the world about us. Perhaps comparison with them will teach us something.

Among the endowments of our human nature must be numbered a keen sense of its own dignity. It is possible that animals may enjoy and be benefited by a like consciousness. Some of their actions intimate as much. You remember the fable of the Artist and the Lion.

The artist showed the lion his last picture, a lion slain by a man who stood in a conquering attitude over him. 'It is a very fine painting,' remarked the lion; 'that is, considering that the painter was a man; but if we lions were artists we should manage the subject more agreeably to the truth and fitness of things; the posture of the two principal figures would be reversed.'

In ancient times apologue and allegory was the favourite

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form of uttered wisdom. Euclid and Æsop ruled the world of intellect together; and were as truly the masters of the masters of the portico and the grove as the child is father to the man. The fable is a key to the transition of man from a state of barbarism to a state of civilization. It marks the joining line where the quick observant fancy meets the reflecting intellect. The vivacity of nature is not yet lost; the majesty of knowledge is not yet quite assumed. The poet, the philosopher has been born, but the *funiculum uteris* is not yet cut. The fable is a constant quantity in the Development Theory; and rules as mightily to-day among the Red Indians of America, and among the boys of the public schools of Boston, as ever it did in the days of Samson and Abimelech.

Necessity is the mother of that invention which we call Natural History. Whatever the exigencies of the savage life demand, that, of course, monopolizes all its energies of observation. The Indian tribes of our North-West, when asked the name of any one of the thousand flowers which bloom upon their prairies, answer simply, 'flower.' They have but this one name for all of them, for all of them are useless. But if you ask these savages the name of any of their trees you will receive a score where we have only one, for they employ a separate name for every slight variety of every species of growing wood; because their very lives depend on knowing which will serve them best. Consequently, the names they give describe utilities. It is a mistake to suppose that savages have keener senses, or superior powers of observation, than the highly-educated and more intellectually endowed civilized man. For discrimination is more the product of systematic language than of eyesight. Yet, on certain sides, the sides of life and death we may well call them, the unhappy savage makes himself amazingly acute. His names for things which interest him are a study of precise description. But he always seizes his victim by the hair of the head; he calls things only by their initials; therein he differs from our naturalist, who must give Christian, middle, and surname in full, and loves to add the title and address besides. The savage lights up his subject with a flash; in the dark chamber of the pyramid, his living tomb, he

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walks by matchlight, not by sunlight. But his match is a magnesium wire; and for the moment that it lasts, it shines forth like the sun itself.

When the Cherokees first saw the horse bestrode by De Soto they were as much amazed as were the soldiers of Fabricius when they first beheld the elephants of Pyrrhus. But they named it instantly "the animal with a single finger-nail." Modern science has made no better generalization than this *uniungulus*. If there be a characteristic posture for a frog or lizard, the Algonquin will be sure to show it on the bowl of his tobacco-pipe, the Mexican on the temple sculptures in honour of his god. Ethnologists have made great capital out of this. The oblique eye and elevated ear of the Egyptian effigy is one of the archæological puzzles yet unsolved.

The same instantaneous play of instinct, through the observant fancy of the deaf and dumb, sparkles upon the whole surface of their poetic nomenclature. They catch the slightest peculiarity of each individual for whom they need a name, and name him from it by some appropriate, imitative, or descriptive gesture:—one from a mole in the cheek; another from his height or dwarfishness; another from always sitting cross-legged; another from an habitual pensiveness. We grade *nations* in the scale of civilization by this propensity. People who are given to gesticulation when they talk, the Italians and the French, for instance, are set down as imperfectly cultivated nations; for gesticulation when spontaneous is imitative, the supplement of language, making its shortcomings good. The well-bred gentleman has a quiet mien, because in his position the brain relieves the body of all responsibility; because abstract ideas take the place of concrete examples, not only in his solitary hours of thought, but in his intercourse with gentlemen. The highest conversation goes on by *hints*, not by descriptions of things. The intercourse of low-bred people, and of the savage world of man in every age, must ever be the prosy iteration of details.

The development of the savage faculty of observation under the tuition of our modern information makes the technical naturalist, the describer of details, the mere determiner and namer of species of animate and inanimate things. This is the lowest order among men of science,

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constituting a class which represents the savage or primeval man in the circle of the highest civilization; a class characterized also by two other well-marked traits, common to savages—an inordinate jealousy and love for personal reputation in details—and a materialism, springing from too close and too uninterrupted dealings with flesh and blood alone. Even the laws which this class of naturalists discover are laws of *form*, and are soon personified by them as the sole deities.

No student of nature is competent to be ennobled until he has begun to reason largely upon his observations, and to put his well-bred fancy to its higher trials, with courage, hope, and modesty. The genuine man of science is like the new spider which they are studying at the Cambridge Botanical Gardens. It has two spinnerets. With one it spins a coarse, strong, silvery-coloured thread which it uses for the radii and stanchions of its web. Then afterwards with the other it spins a finer, golden-coloured silk, with which it fills-in all the intervals, and so completes the harmony and beauty of its web, establishes unity, and makes a net for every kind of flies. We tie our observations together with our theories. We strengthen science by discussing facts; but we must reason on them or they bring us in no food. And the food we need is not barren facts for the understanding, so much as noble fertile ideas for the soul.

An entomologist who neither knows nor cares to know the divine effusions of the Christian heart—who speaks with contempt of all philosophy—scoffs at the mention of the spiritual—hoots metaphysics out of the academy—and is even petulant with his brother nomenclators, if they express some natural aspirations of the human heart for freer space than that afforded by the limits of a memoir on the comparative anatomy of *Holothuria Sinensis* or *Spirifer semireticulata*—such a naturalist (and there are plenty of them) is as ridiculous to the eye of science as is the clergyman who not only does not know, but does not want to know, the normal number of legs in the fly that buzzes about his sermon, or in the sedate old lady spider that spins in the corner of his ceiling.

In nothing is the narrowing tendency of mere terminological natural science more clearly seen in our day than in

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the copious and often heated discussions to which the Development Theory, as applied to man, has given rise. At the risk of being accounted either prosy or else unintelligible, I must endeavour to give some account of this theory, which, whether right or wrong, is too important to be overlooked, too noble to be despised, too nearly related to the truth to be treated by friend or foe with anything but the highest respect. It is, in fact, a supplement to the Nebular Hypothesis. What *that* proposed to do for the worlds in space, the solar system, our earth and its whole *inorganic* constitution, *this* purposes to do for the *organic* kingdoms, taking the subject of creation up where its first chapter ends—where life begins. Together, the two theories form one tremendous whole, one scheme of thought, the highest reaching after transcendental truth which the intellect of man has ever made.

The subject has been regarded from three points of view. Three questions may be asked respecting the plan of creation. One is a German question; one is a French question; one is an English question. Let them come in that order.

Hegel, the master of modern German philosophy, until recently—and to a greater or less extent all the rest of the German metaphysicians—consider matter a mere phenomenon of mind. They believe, as Bishop Berkeley taught, that all things are ideas. They ask: What Plan had the creative intellect within itself? What was the primeval order of the Creator's thoughts? They say: If we can discover that, we need ask no more, for what we look at is not real; things are not what they seem; creation is the dream, the reverie, the phantasia of the Infinite Intelligence.

Opposed to this transcendental school stands the positivism of Comte and his numerous followers, perfectly characteristic of French thought, French life, French taste, French science. According to this, we know what we know because it is knowable fact, because the visible universe is a great reality, because its actions towards us are genuine and complete instruction. But of God and his intelligence we know nothing. The plan of creation is a catalogue of the actual sequences and consequences in nature.

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In England, that clear, wise, gentle writer of our day, Herbert Spencer, is just now busy resuming all that a third class of thinkers have been saying, in what may be called, with some propriety, an eclectic system; somewhat uncertain, as all eclectics must be; but eminently practical, as all Englishmen must also be. On the one hand, they deny that we can learn the secrets of the Divine Will; on the other hand, they deny that we can *prove* the truth of facts as everlasting facts. They prefer to say that we can only see with the eyes given us, and reason with the logic of a man. They demand only what is that best mode of organizing our observations in a reasonable manner, so as to produce the most harmonious and satisfying system of nature, as it seems to us; leaving the questions of reality, certainty, divine intention, and all that, entirely out of mind for the present.

You will not be displeased if I decline to enter more deeply into explanations or discussions of these various philosophic stand-points, in a lecture devoted to a special subject. It would be easy to point out the numerous absurdities and inconsistencies which the uncommitted thinker cannot be blind to in their advocates, even while he finds himself bending more favourably to one than to another, according to the constitution of his mind and the subject nature of his studies. Yet it is by the counterblasts of these three great winds of doctrine that the waves have been tossed so high about the double question of the Nebular Hypothesis and Development Theory. The grand debate is, on the one hand, whether God had any forthgoing, consistent, consecutive, advancing, and developing plan in his own mind before he created the universe; or whether he fixed such a law of development in its nature; or, on the other hand, whether all such supposed plans are merely in man's eye; the useful but vain endeavour of us intelligent spectators to grasp the details of this divine invention in some systematic mode, to avoid confusing our own intelligence. If there be no plan except such as each man can feign unto himself, science has nothing to do with it. But if there be one, then science cannot rest until it be made out precisely, completely. If it be in nature, nature will show it by her works, or rather by her growth. If it be in God, God will declare it, *seriatim*, by miracle or

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otherwise. If it be in both, man cannot fail to learn it sooner or later; even if its most perfect comprehension be reserved for higher intelligences.

You will say that this is all words! words! I grant it. And yet this represents the first stage of the controversy; and makes those who offer 'divine plans' for consideration the enemies of those who deny all possibility of a divine plan outside of the human mind. The hostility of supporters of different divine plans *towards each other* has a different foundation. One school accuses the other of excluding God from nature; of refusing the Creator access to his own creation. The other school retorts that it is superstition, not reverence, to require the painful, toilsome, endless supervision and revision of the Deity, if his work be perfectly constructed at the outset, and full of living, moving, renovating, growing forces, like a tree or human brain. Between these combatants who can mediate? None but Deity itself. Science has no argument paramount to close the lists or proclaim the victor. Science is the study of phenomena, not of essences; the measurer, not the explainer of forces; the observer, not the comprehender of the laws of nature.

But even when we abandon, as we must, all transcendental considerations, and confine the subject strictly within the pale of science, we still hear vehement debating. If we ask men of science whether, when they examine the universe, the world we live in, the life of the planet, they discover traces of confusion and disorder, they answer unanimously, No! Everything works according to fixed laws now; everything seems to have come into being in an orderly manner through all past ages.

But if we ask them what particular order, or plan, or system can be made out according to which the progress of events can be classified, they begin at once to contradict each other.

Remember that I am only speaking of the world of life, of the organic forms of living beings. Setting aside minor differences of view among botanists and zoologists, I will designate three principal divergent theories of the development of life upon the planet, based all of them upon that record which is written in the rocks, and which you will find imperfectly described in the best and latest works

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on geology. All agree, 1. That there is an evident progress in the appearance of higher and higher forms upon the planet, through the geological ages. All agree, 2. That the exact epoch of the appearance of this or that form cannot be made certain; first, because the record in the rocks is itself not complete; and, secondly, because our examination of the record is still less complete. New discoveries every day teach us to be careful how we dogmatize about one shell having been created before another, or about the absolute non-existence of any bird during the previous reptilian era, &c. All agree, 3. That a multitude of intermediate or synthetic types (as they are now called) will be discovered, making the series more complete, filling up gaps between widely different kinds or genera, to say nothing of species, of animals and plants. There have lately been found, for instance, fossil horses with deer's feet, mammoths with the marsupial pouch, a lizard with feathered wings and tail, showing how little prepared we are yet to establish our schedule of organic forms.

But all agree, nevertheless, 4. That taking what has been discovered altogether, there is a marked order in point of time, not to be mistaken. The most numerous fossils in the earliest rocks are corals, sea-weeds, bivalve shells, and such low forms of animated nature. In the formations over those we find land plants and fishes of low forms in vast abundance. In still higher rocks we first find multitudes of reptiles, and cephalopods among the shells. Still later comes the age of birds; later still that of the mammals and deciduous trees; last of all, as a characteristic feature, man.

All agree, however, 5. That this order of events is general, not special; and only appears on a grand sketch, from which a multitude of inconsistent or confusing or doubtful details are left out.

Still all agree, 6. To accept this general system of development as a rude, rough whole; a kind of blocking out the statue; and that it must mean something.

But now for what it means. Now they begin to disagree, coming to particulars.

The first debate arises over the question of the *solidarity* of the system. One party contending that there is *no break* in it. The other party takes exactly the opposite

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ground, contending that there can be *no real connection* in it; that the breaks in the line are infinite; that they are patent to every eye, and form, in fact, the very basis of the science of geology. Mr Agassiz has gone so far as to assert that two fossils, although *exactly similar* to the human eye, cannot be of the same species if they are found in different formations, however near; and he has applied the same canon to the subject of different localities in one age, affirming that two shells, although to all appearance of the same species, cannot be in reality the same if found on both sides of the Atlantic.* On the other hand, Mr Darwin, following up the arguments of Lord Monboddo, M. Lamarck, and Mr Chambers, and followed in his turn by Grey, and Huxley, and other first-class botanists and zoologists,—Mr Darwin has astonished the world with the opinion, that there can be no radical disconnection between any two living beings; and that all geological gaps would be filled up and bridged over with intermediate forms, if our search after them were but sufficiently shrewd and protracted. He asserts, in fact, that nature started with the idea of simple cell-life, which gradually increased, combined, improved, and perfected itself through an infinity of forms of plant and animal, until we see all things as they stand and move to-day. Monboddo and Lamarck, indeed, gave fanciful accounts of this extensive and mysterious process; applying their theories chiefly to the case of man, to explain why he had left the trees or the shore, and how he had lost his tail. To the great naturalist of the Pacific Ocean belongs the honour of organizing in a reasonable manner this side of the question. It has therefore come to be known by the name of the Darwinian hypothesis as well as by any other. I must refer you to his own description of that theory of 'Natural Selection,' by which he tries to account for the transition steps along the line of change, and to explain the sudden and frequent breaks which are apparent in its course. It is a great thought, and deserves the honours heaped upon it. And all allow that it is true if kept *within the regions of variety*. But whether it be true for actual *specific* differences, and therefore for changes of *genus, family,* or *class,* there are vehe-

* Mr Conrad, who not two years ago opposed this view as extravagant, now seems inclined to acquiesce in it as probably correct.

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ment disputings. And I can see no mode of settling them, if we cannot take nature in the very act of exchanging one species for another, or converting one species into another.

The second subject of debate respects the *unity* of the system. Is there but one series; or are there several parallel series of organic forms?

The Immortal Cuvier established the grand quaternion of types which all modern comparative zoology virtually accepts. He divided the animal world into *Radiata*, or creatures constructed as if branching out from a centre in several directions, like star-fish,—*Articulata*, creatures constructed by addition lengthwise, like the worms,—*Mollusca*, creatures with two parts symmetrically fitting along a vertical line, like the clam,—*Vertebrata*, creatures with a backbone, or, as Agassiz would have it, with two parts unsymmetrically fitting along a horizontal line.

The question then comes up, whether between these four plans on which all animals are made, there can be discovered any *logical* distinction as to worth or dignity. The radiates, it is true, are all low creatures. But among the articulates we find the bee; and among the molluscs the cuttlefish, both of them creatures of high breeding and intelligence. The great development of brain, indeed, belongs exclusively to the vertebrates; but so far as we can see, there was yet no inherent impossibility in the attachment of such a brain to any radiated or annulated body. In fact, the backbone of a vertebrate is itself an annulated system, giving off nervous branches from a series of ganglionic nodes. It is argued then with some plausibility, that these four capital types of animal creation have no comparative dignity in themselves; and that *that* is an idiosyncrasy of man. They are each and all perfectly and beautifully adapted to their circumstances,—the mollusca to the waters, the articulata to the air, the vertebrata to the land, and the radiates to the planes and lines where air and land and water meet. It ought not, therefore, to be expected that one or other of them should take precedency in the creation, either in respect to government or in respect to seniority. In other words, the earliest dawn of life should show us at the same time molluscs inhabiting the sea, insects in the air, vertebrates on land, and radiates where land and water meet.

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Now how stand the facts? In the Potsdam sandstone, the rock at the base of the Lower Silurian system, and the oldest rock in which fossils have been found in both variety and abundance, there are multitudes of corals and seaweed, multitudes of worms and trilobites, multitudes of bivalves and univalves, and the foot-prints, at least, of vertebrate animals, which make the representation of all the four kingdoms complete.

If there *has* been a Darwinian development of animal life upon the planet, then it looks as if it had been carried out along four lines rather than one. Four stand-points of creative energy must have been assumed; four startings out of life must be accounted for; four mysteries, four miracles, four beginnings of creation, to be developed instead of one! But where *all* is mystery and miracle additions are hardly noticeable. It becomes Mr Darwin's business, then, not only to suggest some plausibly rational mode by which one species could gradually or suddenly pass the short interval which separates it from another; his explanation must suffice to bridge the awful chasms which have always kept these four great plans of structure separate, along the lines of their development. He must show us how an animal of radial growth could be developed into one of linear growth. Nay, he must fill up the immense interval between the plant and the animal; and, finally, the chasm between the atom of carbon or hydrogen, and the nucleated cell of albumen or fibrin. He must explain the genius of life itself before he can make his law of natural selection stand for anything more than a beautifully-worded description of the ills that all flesh falls heir to when it is born upon this planet. *How* it is born upon the planet is another matter, and remains unexplained by his hypothesis. We do not get rid of miracles by chasing them back along the ages to the starting-point, and concentrating them there. A line of battle is not necessarily vanquished and annihilated when it is rolled up by an attack upon one flank, when there is a reserved force at the other end.

You see, this train of argument attacks not so much the special statements of the Darwinian hypothesis, as its very foundations. It says to Mr Darwin, My dear sir, you have four times as much to do as you thought you had. You must not only explain how a man came from a monkey,

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and a monkey from a squirrel, and a squirrel from a bat, and a bat from a bird, and a bird from a lizard, and a lizard from a fish; but you must suggest some possible means of transforming a vertebrate fish out of a shell fish, or out of a jelly fish, or out of a lobworm or trilobite; then you must go on to show us how the first trilobite, or the first coral animal, or the first rhizopod was obtained by your process of natural selection out of still earlier *vegetable* species. Nay, you cannot even stop there. You must explain the very first appearance of living tissue out of the inorganic elements of dead matter. The world is not a unit; it is like the magic ivory balls of the Chinese shops, globes within globes, worlds within worlds—all visible through the holes in each other's peripheries.

Now what is the Darwinian answer to this objection, derived from Cuvier's four-fold classification of the animal kingdom? This:—Cuvier may not have made an absolutely perfect classification. There may be intermediate forms, which we cannot yet be certain where to place; which, when discovered, will fall as naturally under one plan as under another. We are not yet quite sure that there are just four distinct and sharply defined lines of living type-form; we are not sure that nature lays out her work in *lines* at all. She is not as linear, at all events, as our literality would have her be.

There is a just tendency in the new schools to establish rather a circular classification. The great disciple of Cuvier, whom you have had the good fortune to attach to your own city and university, and whose impulse all American science has been feeling now for twenty years, has elucidated the four types of animal life and their common appearance at the beginning, in lectures which he has delivered in this room. I have not the courage even to saunter through the meadows which he owns. I refer you to his own masterly arguments. He is a vehement anti-Darwinian. But even against this master of the subject I must warn you. He has great opponents. And the most recent discoveries are also against him. There have lately been discovered infinitely older fossils than those I just now alluded to in the Potsdam sandstone. I hold in my hand a specimen of the oldest fossil in the world; and lo, it is a rhizopod, a creature belonging to the very lowest forms of

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life. It is true these lowest forms are peculiarly fitted for preservation in the fossil state; others of higher form *may* have co-existed with them and been destroyed. But when we see these lowest of all known forms standing alone at the very beginning of time, and man, the highest and noblest form, appearing at the end, and an unmistakable gradation, *always upward*, through the long ages, and along all the four lines of plan—what open mind can help imbibing, if not the Darwinian doctrine, at least the spirit of the Theory of Development?

But this leads me to the third head of the discussion: the *always upward* direction of the development of life-forms. This also has not been left unquestioned. One of the most popular and powerful thinkers that geology ever owned was the lamented Hugh Miller. Large-minded and erudite, trained by patient, personal investigation in the field, with a great brain, and a great love of truth, he was also a religious enthusiast, bigotedly orthodox in the sense of Geneva. His views therefore as a speculative geologist were peculiar, but none the less worthy of consideration, for they insisted upon the introduction of such exceptional phenomena as the advocates of the Development Theory were too much inclined to ignore. He opposed the theory; and upon the ground that it was not complete; that not only were there breaks in the series of life-forms which could not be got over, but actual reversals of direction. He argued for a law of development actually downwards, or backwards, as well as for a law of development forwards and upwards. It is true that he made the law of degeneracy subordinate; but he still insisted that it was not exceptional, but universal, and included in the other. His notion was, that life advanced, not in an obliquely rising straight line, but in a succession of higher and higher parabolic curves. Each type as a whole he allowed to be nobler than the type preceding it, but not in every part, or throughout its whole career. He preferred to imagine each type beginning below the maximum dignity of the type preceding it; then rising forward to a maximum dignity superior to that of the type preceding it; then falling away, degenerating and decaying to extinction. He instanced our varieties of fruits, and the rise and decay of families of men, as examples of this law, subject to

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inspection in our day. Including size and number among the elements of dignity he showed how the fossil Irish elk excelled in size and strength any now-existing ruminant; how the cave-bear, the aurochs, the mammoth, the Sivalensian turtle, the dinodon, each and all excelled the bears and oxen, elephants, turtles, and kangaroos of the present day; how the mosses of the coal-measures were as large as our trees; the frogs of the middle secondary age as large as modern elephants. Each age, said he, has been indeed an advance upon the previous age, and has brought forth new illustrations and finer ones of the Creator's skill. But each age has had its own superior glories, not to be dimmed by any exhibitions of a later date. Each type has been quite perfect in itself, was made entirely suitable for the time and place of its creation; rose up to power; took full possession of its whole inheritance; grew to its utmost size; completely did its work; but when its time was past fell off and withered; grew small and weak, and, perished, to give place to the next type, ordained to a like destiny. The appearance of man upon the earth, clad in beauty, armed with dominion, but after a time of glory, falling from his first estate, and becoming savage and degenerate, seemed to his eyes a natural illustration of this law. And in like manner he would explain the coming of Christ at the end of the old dispensation; and the rise of the Christian Church followed by its decay. In the same spirit he anticipated a millennium, and the appearance of angelic men, perhaps to fall in turn, like Lucifer and all his angels.

Geologists read Hugh Miller's book with as much delight as do other people. But they do not accept his Theory of Development; the facts on which it was apparently based, when critically examined, do not sustain it. And every geologist must feel that such a theory could never have been suggested by a summary of all known facts relating to the subject, to any mind not prepossessed by a certain set of *theological* ideas. It was the last struggle of orthodoxy against natural science embodied in geology. Orthodoxy may well be proud of its advocate, and apotheosize his memory; but no cause could be won so.

I would not dare to go into a detailed discussion of the

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doctrine of development this evening. The literature of the subject is already copious, learned, well and clearly argued, and within easy reach of every one who feels desirous to arrive at some conclusion. I have only aimed at stating the question, and suggesting, that it is an open question not only between theologians and geologists, but between one class of men of science and another, and that it ought to be no bugbear in the path of generous and truthful minds.

The aim of the Creator seems to be to fill out all the possible details of his great plan, to realize all possible plans, modes, conditions, forms, powers, accidents, and relations. The highest artist wears the least mannerism. Infinite variety is the clue to the labyrinth of the universe. Infinite variety is, in fact, the only law of natural history as yet fully and completely established to the satisfaction of the mind of the naturalist. It has been made the law of every individual life.

First let us look within. Does not our education proceed by alternate synthesis and analysis of perceptions? We collect facts; we combine and compare them; we perceive their likeness, and discover what we call *laws*. Then we take these synthetic laws, and go to work again, seeking new illustrations and confirmations of them. Instead of that we perceive *exceptions* and *denials*. We learn to contrast and discover differences; we analyze, or separate, or tear to pieces what we had put together and consolidated. We have to do it. We find that bad bricks have got into our wall; inharmonious tints have been chosen for our pattern. We build, we weave again, now more successfully. Thus we advance; thus we enrich our life, the world, and history.

Turning our eyes again towards God, do we not see Him at the same kind of alternate synthetic and analytic creation? Herbert Spencer calls it the law of Differentiation; and shows us how the forces of matter first aggregate and then disintegrate the solid parts of the world, condensing the gases, combining the bases, dissolving the salts, crystalizing the deposits, tearing down the mountains, building up the valleys, alternately consolidating and dispersing, arranging and disturbing, forming and reforming, until that variety has been produced which char-

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acterizes the present state of things. He shows how the present variety of human society has been accomplished on the same principles; the endless variety of art, of thought.

But we are only concerned now in seeing how truly the law holds good in Natural History proper. Whether we suppose one or another classification best, it all comes to this in the end: every nook and cranny of the world has got itself somehow filled with living forms, all fashioned agreeably to the circumstances of the place of their existence. As these circumstances vary infinitely, so must the living forms.* If there be an apparent advancement and ennoblement of living forms through the ages, it must be dependent in some reasonable manner upon some slow advancing movement in the physics of the globe, with which the living forms must stand in amicable harmony. In geology, therefore, there must be some explanation for all the phenomena of palæontology. If man did not exist until quite recently, we must conclude that the earth was not prepared for him till recently. And so of all the other and lower creatures. This teaches us the needlessness of any transcendental treatment of the development theory; and the wisdom of those who keep the discussion of it down to pure Natural History facts.

One of the most remarkable and important consequences of the law of Differentiation bears directly upon the history of Man. Differentiation is not only the production of *variety*, but the production of *multitude*. Both are dependent (but in different ways) upon the bewildering network of cross acting physical forces, which support and also destroy life. If these physical forces actually *produce* living forms, we see at once that they must generate them in multitudinous crowds. If they do not, but only *sustain* them and *destroy* them, we see that the Creator was under a physical necessity to place in existence great multitudes of living forms if he desired any of them to continue to exist. This is true not only respecting the mul-

* If there be 90 per cent. of carbonate of lime in the sea, there must be a vast over-proportion of infusorial forms to appropriate it, while a corresponding proportion of infusorial life of another kind appropriates the remaining 10 per cent. of silica. (See Jukes' Manual, p. 134, 135, f.)

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titude of individuals, but respecting the multitude of varieties or species.

What do we see, then, when we look around us? First, as to the multitude of individuals. There are supposed, indeed, to be a thousand millions of human beings on the earth: but this is nothing. There are a thousand millions of mosquitoes in a single swamp. Each female fish produces a million of young fry per annum. Is this a law of life? Yes! but it is still more a law of death. The final cause of this fecundity must be discovered rather among the destroying agencies of nature than among its sustaining harmonies. We notice, therefore, that those animals are most prolific whose individual lives are least secure; and these are what we call the lowest forms of life. We call them so because daily wholesale destruction gives us the sense of waste, and consequently of worthlessness. These are the forms which would exist during the earlier and more adventurous days, when quaking lands, and hissing seas, and steam-filled skies, made the vexed earth a most unnatural mother; quite unsafe to trust her with children of a riper nature than corals and sea-weed.

What is true of the multitudes of *individuals* is equally and for the same reason true of the multitudes of *specific forms*. Each species has a *habitat* and is fitted to it. The development theory supposes the *habitat* to have fitted up its own specific forms. Whether that supposition be true or false matters little; the fact remains unchanged in either case that each change of circumstances causes, or necessitates, or is accompanied by, some specific difference. Now if an animal can only change its nature to suit a change in its circumstances it need not perish. But this is a high faculty, scarcely exercised by any plant or animal excepting man and a few of the mammalia which keep about him. Even these exert the power of adaptation so imperfectly that they are sure to perish in the long run when taken from one climate to another; and man himself can only accomplish the immense feat of permanent migration at the risk of individual destruction, and by calling to his help the whole physical, intellectual, and spiritual worlds to be his body guards.

Nature grants the right of selecting its own food to every creature that consents to remain within the limits of

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its own habitat. There and there only nature has provided exactly for the demands of its stomach, and its stomach is the wise guardian of the interests of the rest of its constitution. Liberty is perfect, because the necessary and the pleasant can be secured by the mere exercise of will. Migration must destroy or at least limit this freedom of the will. The animal that invades territory destined to support the life of other animals unlike its own, finds poisons when it seeks for meat, and must endure the consequences. 'Tis now a choice of evils. The right to roam and choose at its own sweet will is gone. The will is now subjected by a judgment rendered anxious and unhappy by self-evident want of harmony between its suffering desires and nature's strange provisions. To this law all animals must be subjected which attach themselves to man. But in the highest degree it is the key to the development of man in history. The wider the migration, the greater the embarrassment, the keener the suffering; the more subjected the will, the more unfolded the intellect and passions; for hunger is fierce and cunning, while satiety is unobservant as an oyster and gentle as a lamb.

Thus it happens that every possible slightest shade of variation in the conditions of existence must be a trump of doom, or else must be provided against in the plan of the Creation by some equally subtile variation in the organs of life. This is the only explanation for that incredible number of specific forms distinguishable among the lowest ranks of animated nature. Think of it! A German entomologist has made out 820 species of insects, preserved in the pieces of amber which form his cabinet, all of them, mites, gnats, mosquitoes, proboscidians or sucking flies, who met their fate by sticking fast in a gum which exuded from trees of tertiary age, growing in moist, low places sheltered from the wind. Of all these species only 30 were such as now belong to the mosquito tribes of Europe; 100 were species which we have at present living in America; but not one out of the whole 820 was like any of the numerous species of mosquitoes known in the south of Africa.

Think again of the numberless species of corals belonging only to one age. Mr Sydney S. Lyons' cabinet of Devonian and Silurian crinoids at Louisville, in Kentucky,

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magnificently furnished as it is with genera and species, gives but a faint conception of the multitudes of separate beautiful forms which specify the various physical conditions under which that family of the radiated animals has struggled so bravely, but often so unsuccessfully, to continue to exist.*

But as we approach our own times, and a quieter bosom gives suck to worthier embodiments of the wisdom of the divine, more self-sustaining, more adaptable to circumstances, more hardy, more migratory, or more inventive, we see how these countless multitudes become more moderate swarms, vast herds become small flocks, flocks turn to single pairs. Life has grown safe. A genus need no longer put forth its hundred specific forms, like tentacles, to cling withal to the tempestuous earth. Instead of one bear for the summer and another for the winter, one bear will do for both, provided he may hybernate. One set of birds for north and south will be enough, if you will teach them to migrate twice every year. Let man be but a single species, yet if you give him a *mind* to be his own tailor, shoemaker, house-carpenter, shipbuilder, farmer, and gunsmith, he may inhabit the whole earth from pole to pole. This is the great argument for unity of species in the case of man; a subject, however, to be taken up in my next lecture. We are speaking now of the *dignity* of man; and of the likelihood that his numbers will be small in inverse proportion to his powers of resistance to those fatal forces of surrounding life, beneath the blows of which all meaner images of God have been in past times overthrown and utterly destroyed.

It is this ability of man to protect himself against nature that affords us an explanation of the paucity of his remains as fossilized. For, in the first place, as I have just explained, the race of man has been a *scanty race*. And, in the second place, the individual man has been a *cunning fellow*, always on his guard: foresighted against the malicious tricks and brutal damages of nature; wisely suspicious of the quagmires and quicksands in which the stupid mammoths were entombed; prompt to devise ex-

* The promised work of Professor Agassiz will give us another magnificent example from the basin of the Amazon, where he has discovered hundreds of species of fish in a single lake.

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pedients for recovery in disaster, and, above all, able to form leagues for mutual life insurance. Yet with all his superior advantage, nature was sometimes too much for him. As I narrated in my last lecture, men have been fossilized just like inferior brutes. As the eruption of Vesuvius in Pliny's days caught a few sleepers and a sick man or two, when all the rest of the inhabitants of Herculaneum and Pompeii made good their escape; so in an age immensely older than the pyramids, a torrent of volcanic mud captured one of the flying aborigines of central France, part of whose skeleton is now in the museum of Le Puy. The crater from which the torrent came belongs to a group, the fires of which have been extinct since the days when the rhinoceros and lion were at home in western Europe, before the glacial epoch.

The care which men have always taken to secure the bodies of their relatives and friends from decay has been the chief cause of their utter disappearance from the earth. Religious veneration has produced the same effect in ages when dead bodies were burned instead of buried. The superstitious dread of being devoured by wild beasts after death has caused many races to suspend their corpses in baskets from the boughs of trees, ensuring speedy dissolution. Yet the buried bones of ancient heroes, as we have already seen, have been occasionally exhumed by floods and swept into caves and buried again in a broad common alabaster sarcophagus in the most effectual manner.

In spite, then, of the paucity of human beings to be fossilized, and in spite of the care which they have always taken not to be fossilized, they have not always escaped fossilization. But the conditions under which human fossilization became possible were so hard to realize, that every case was an exception to that law which has made the strata of the earth so many cemeteries of the past, so many museums for the present. Every new discovery of a fossil human bone of ancient date is a sort of natural miracle wrought specially for science.

In studying out man's role in the great drama of the Development of Animal Life, we depend greatly upon these precious relics of his existence in an older era than the present. But in determining man's relative dignity in the grand scale of animal life, we have other and abund-

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ant materials for thought. That scale not only ascends through all the ages, but stands to-day before us. The earth is still crowded with the representatives of most of the departed forms. Details are changed, but Natural History continues still the same. Man can be classified by what he is, as well as by what he has been. If we need see all that he can be, we need but travel from land to land, from city to country, from continent to island, from field to forest, from mountain to desert, from the ice-fields of Greenland to the jungles of India and the swamps of the gulf of Guinea; everywhere some new variety of man will offer itself for our examination,—surrounded by as various forms of lower life, with which to be compared.

In spite of all this wealth of opportunity zoologists have found it a most difficult task to give an adequate and satisfactory definition of the animal called Man.

'Linnæus led the way in this field of inquiry by comparing man and the apes in the same manner as he compared these last with the Carnivores, Ruminants, Rodents, or any other division of warm-blooded quadrupeds. After several modifications of his original scheme, he ended by placing Man as one of the many *genera* in his Order Primates, which embraced the apes and lemurs, and also the bats; for he found these last to be nearly allied to some of the lowest forms of monkeys. But all those modern naturalists who retain Linnæus's order Primates, agree to exclude the bats (cheiroptera), and most of them class Man as one of the families of this order Primates.'*

Blumenbach (following Linnæus in 1779) proposed, on the other hand, to separate Man entirely from the Monkeys. He called the latter 'fourhanded' *quadrumana*. His definition of Man was short and simple enough: *animal, erectum, bimanum*. Buffon had used the same terms in a somewhat different way 13 years before. Cuvier used them again 12 years later. He placed the apes, monkeys, and lemurs together in one grand order, and man in another order by himself.

In spite of the authority of these four great names, modern zoologists have preferred to make man stand alone, not indeed as an *order*, but simply as a *family*. Professor

* Lyell, Ant. of Man, ch. xxiv.

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Huxley * even repudiates the very term *quadrumanous*. He takes the ground that the hind extremities of monkeys, apes, and lemurs, bear no true resemblance at all to the hand of man. They are in all respects not hands but feet. On the other side he affirms that there is no anatomical difference of type between the hand of a gorilla and the hand of a man. The hand of the gorilla is merely clumsier, heavier, and furnished with a shorter thumb. The foot of the gorilla he shows to possess also the three characteristic features of the human foot: 1. By the same arrangement of the tarsal bones; 2. By the presence of the same short flexor muscle and short extensor muscle of the digits; and, 3. By the presence of the same peculiar muscle called the *peronæus longus*. The only difference which can be mentioned is merely formal, viz. that the great toe of the gorilla is more movable than man's. In fact, there would be, according to this, less difference between the extremities of man and the gorilla than between those of the gorilla and orang-outang;† and yet others of the monkey tribe have still more widely divergent extremities.

In like manner a comparison of the *teeth* of man with those of the apes and monkeys has failed to establish them in separate orders. 'The number of teeth in the gorilla and in all the Old World monkeys, except the lemurs, is 32, the same number as in man. The general pattern of the crown of the tooth is also the same. All the American apes, however, have 38 teeth. The only real distinction between the jaw of the apes and the human jaw consists in the fact that the eye-teeth of the apes project almost like tusks.'

If we institute a like comparison as to other portions of the frame we are led to the same results. There are sometimes remarkable differences between one human race

* Huxley's third 'Lecture on the motor organs of man, compared with those of other animals,' R. School of Mines (March, 1861), embodied in his 'Evidence as to man's place in Nature.' Williams and Norgate, Loudon, 1864. [In Lyell, Ant. of Man, ch. xxiv.]

† The thumb of the orang differs by its shortness and absence of any special long flexor muscle from that of a gorilla more than it differs from that of man. The *carpus* of the orang and of most of the lower apes contains nine bones; that of a chimpanzee, gorilla, and man, only eight.

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and another. Two years ago, Dr Broca, the Secretary of the Anthropological Society of Paris, was good enough to show me nearly 100 human skeletons which he had recently procured from a cave of the Stone age, discovered by an English gentleman, in preparing a park for his new country-house, about ten leagues north-east of Paris. Dr Broca pointed out to me one striking peculiarity in the anatomy of the arm-bones of this ancient race. There was a round foramen pierced through the thin curtain of bone which connects the two processes at the elbow. He assured me that he had examined hundreds of arm-bones obtained from cemeteries of the Merovingian age, but none of them exhibited this hole. Nor is it to be found in the modern human skeleton, except among the Hottentots. But it is a characteristic mark of the ape and monkey anatomy.

There is a fourth ground of comparison. If we can learn nothing from the hands, the feet, the teeth, the bones, cannot we succeed better by comparing the shape and the size of the skull with its containing brain? Professor Dana, of New Haven, dissatisfied like the rest with all other tests, finds refuge in this. He thinks he has established for the whole range of life-development a common law, which he names the law of Cephalization. All animal forms are worth precisely their weight in *brain*. Man is the noblest creature because in him the digestive and the locomotive systems become at last subordinate to the perceptive and the reasoning faculties. I cannot give you the details of his ingenious reasoning. The tendency of zoology has for a long time been to this conclusion. But even here there appears no distinction of kind but only of degree.

Owen, in 1857, unable, as he says, to appreciate or conceive of the distinction between the psychical phenomena of a chimpanzee and of a Boschisman, or of an Aztec with arrested brain-growth, proclaimed his return to Blumenbach's and Cuvier's old classification, making man a separate *sub-class*, based upon three cerebral characters. Owen's assertion was that man differs from the three mammalian classes, represented by the ape, the beaver, and the kangaroo,—1. in the overlapping of his cerebral hemispheres forward so as to cover the olfactory lobes, and backward so as to cover and quite conceal the cerebellum,

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when looked down upon from above; 2. In the presence of what is called the 'posterior horn of the lateral ventricle;' and, 3. In the addition to the hind lobe of each hemisphere of what is called the '*hippocampus minor*.'*

Upon the publication of this theory a storm arose. It was shown that Owen's picture of the brain of a chimpanzee, which he took from a Dutch work, printed in 1849, and on which he based his comparison, was worthless, because it had been drawn from a shrunk specimen. M. Gratiolet, 'the highest authority in cerebral anatomy of our age,' showed by new drawings† from fresh specimens, that no such distinctions between the brain forms of man and the chimpanzee could at all be made out. The human brain which he dissected was that of a Bushwoman exhibited in London. He showed that the human and the simian brains, however convoluted in man, however smooth in the marmoset, instead of having Owen's distinctions, have four grand characters *in common*: 1. a rudimentary olfactory lobe; 2. A posterior lobe, not uncovering, but *completely covering* the cerebellum; 3. A well-defined 'fissure of Silvius;' and, 4. A posterior horn in the lateral ventricle.

To settle the dispute which, upon this, broke out afresh fifteen genera of Old World and New World apes and monkeys, dying in the Zoological Gardens of London, were dissected; representing almost all the forms in dispute, from that of the chimpanzee, the next to man, to that of the lemur, farthest removed from man. The conclusion arrived at from these and from other Continental examinations which were made at the same time, was, that Owen's distinctions had no foundation in point of fact.‡

Nothing remains but the *superior volume of the human brain*, 1. Absolutely, i. e. when compared with the volume of the ape's brain; and, 2. Relatively, i. e. when we compare the brain of a man with the bulk and weight of his body; and the brain of an ape with the bulk and weight of its body.

Now Professor Huxley says that, so far as he is aware,

* Owen, Proc. Linn. Soc. Lond., vol. viii. p. 20. Archencephala was his new sub-class name. (Lyell, Ant. Man, xxiv. p. 481.)

† The false and true drawings are placed opposite each other in Lyell, pp. 482, 483.

‡ See Rolliston's summary on p. 489 of Lyell.

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no human adult cranium contains less than 62 cubic inches, and that the most capacious gorilla skull measured no more than $34\frac{1}{2}$; a difference between them of say two to one—a tremendous difference! The difference between the *smallest* human skull measured by Morton, viz. 63 cubic inches, and the *largest* human skull, which measured 114, is also something tremendous—nearly two to one. If volume of brain, then, be the criterion, the mathematical statement of man's relation to the ape will be expressed by the series

$$114 : 63 : 34\tfrac{1}{2}.$$

But the series will not be complete until we add the size of the *smallest gorilla adult* skull yet measured, which was 24 cubic inches. It is, you see, a descending series, and nothing more—$114 : 63 : 34\frac{1}{2} : 24$. We may add, however, still lower figures, and keep very nearly the same proportions, from among the crania of the lower orders of apes.

Language is no criterion, for every animal has a language of its own. The sense of the ridiculous is possessed by brutes, who laugh with their eyes, or tail, if not with their whole face, as man does. The faculty of worship *in itself* is no distinction; for the devotion of a dog to his master, of a lover to his mistress, of a Christian to his Saviour, of an angel to his God, has the same essential root so far as we can see. Susceptibility to improvement is not peculiar to man; nor the natural law by which there occurs an hereditary accumulation of acquired powers. This also, and all the before-mentioned criteria are only available for a difference in *degree*, but not for a difference in kind, distinguishing man above the rest of the creation.

When we notice the intelligence of the dog, and the elephant, whose type of brain is more remote from man, and see how they manifest the possession of the moral faculties, displaying, as they do, the sense of shame, of justice, of loyalty, of compassion, we find out how little distance our reasoning can go; how imperfect are our data, how mysterious are the functions of all brain matter, how temperate we ought to be in entertaining convictions in regard to the relationship of man to other animals, how sound and high our hope of self-improvement should become, and what grandeur resides in the Apostle's words—'forgetting the things that are behind, and pressing forward to those that are before.'

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Here, as in so many other similar cases, science is entirely at fault,—Rasselas sitting at the foot of the wall that surrounds his happy valley. I think I can see around me in society sufficient evidences that man is a developed monkey. But what of that? Shall a wise man kill himself for shame because his ancestor, ten generations back removed, was hung for felony? What does it concern *us* that our naked and painted forefathers danced their devilish orgies round shrieking victims, set on fire in towers of wicker-work, making night hideous, and the angels hide their faces in pity, horror, and disgust! I confess, for my own part, aside from all considerations of actual science, I like to see every tub stand upon its own bottom. This pride of civilization seems to me the pride of parvenus. If mankind were originally apes, they have, at all events, acquired the right to be so no longer. The ape-like skull of the Stone age has been replaced by the skull of the poet, the philosopher, and the statesman. Let us be satisfied; Christ has come. I only wish that I could present before your eyes, as a worthy close to our train of thought to-night, a picture of some aboriginal savage of the Stone age, and then, in divine contrast to its humiliating ugliness and base brutality, a copy of that immortal statue of the highest type of man, the Christ of Dannecker. I see you love, like the old Greeks, to adorn your city, and honour your great men with statues: why have you not indulged yourselves in the joy of having always before your eyes the wonder of the age—the greatest statue of the greatest Being of all ages? St Petersburg has obtained a copy of it in marble. Why should Boston be behind St Petersburg? It is worth an annual pilgrimage to Stuttgard to behold it. Such majesty! such tenderness! such intellect and wisdom in the brow and face! Such grace and beauty in the form, seen through the flowing robe! Of more than mortal size, it seems no more than man,—no less than all the blessed gospels say of him! the flower of the long development! the very incarnation of the Deity.

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LECTURE V.

ON THE UNITY OF MANKIND.

We are now to consider what light the modern sciences can throw upon the question of the oneness or the manyness of mankind.

It has been common to use with great looseness of meaning the terms race, family, species, in their application to mankind.

The 'race of man' is contrasted with the animal races, and the race of angels,—the word *race* being the English form of the Latin word *radix*, root, and implying a common origin to all the human inhabitants of this planet.

The 'human species' is an expression even more common in late literature than the 'human race,' but quite as indefinite. The word *species* in Latin (*specto*, spy, &c.), like the word *speech* (*sprechen*) in English, has reference to the expression of the inner nature outwardly, upon the face and form, so that it can be understood and sympathized with.

The 'human family' is an expression merely implying the common interests of mankind, as against the forest and the flood, wild beasts and hostile elements; while it includes the ideas of possible fraternity, consanguinity, intermarriage, and fellowships of every spiritual grade. When the apostle wrote 'for of one blood he hath made all the dwellers upon earth,' he shared the indefinite notions of that and every other age, and expressed his Christian philanthropy in the usual way, quite sufficient for his purpose.

Our inquiry is of another order. Science is obliged to restrict words to one meaning. At the outset of a mathematical discussion the value of x is unknown; but at the close of it, the value of x is made out to be some one

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certain quantity, and no other. We have not yet made out the value of x in the discussion of species. We still use the terms *race* and *family* in a loose way. We talk of the various races of mankind,—the black race, the white race, the yellow race, the red race. We even subdivide these, and speak of four or five black races, i. e. the Caribs of S. America, the blacks of Northern Africa, the blacks of Southern Africa, the Negrito race of the Andaman islands, and the Milanesians of the Eastern Archipelago. Sometimes our subdivisions become small and numerous; e. g. we divide the white race into the Arian and Shemitic branches; and then subdivide the Shemitic branch into the Hebrew, the Arabic, the Coptic, the Phœnician, and other races. Ethnologists, therefore, differ in their classification of human races so much, that the number ranges from three to thirty. The questions which start up for their consideration are questions of detail, and the word *race* has, in common ethnology, got to confining itself to these details.

But it carries a larger significance; it has the same scope with the word *species*, with this difference: viz. that the word *species* reminds us of other animals beside man, and excites the question of their possible consanguinity with him; while the word *race* excites only the question of one man's relationship to another.

My lecture this evening will therefore deal with these two subjects: race and species; or, in other words, with the distinctions of human races, and their origins. I state it in this form, so as to get rid of the transcendental discussion of species *per se*, which would absorb the whole evening and lead us to no results after all. And I take them in this reversed order of time because I do not believe in *à priori* science. We must take existing facts first, and argue back from them to what has been fact in times past.

But before investigating the facts of the case, I must state the condition of our apparatus for the investigation. Taking the sciences in their order: what means do they afford us for determining the unity of the human race?

From the group of the *mathematical* sciences we get our calculations of the increase of human population; our knowledge of the relations established between physical geography and human migrations; and between climate

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and character. We get also certain wonderful glimpses into the mystery of change of organic form, which, whether retained by the Creator in his own hand, or deposited by him as an efficient cause in nature, is, in any view you may take of it, the great central subject of this investigation.

From the group of the *inorganic* sciences we receive the discussion of facts only hinted at in the last lecture; the fossil remains of primeval men and of contemporaneous animals, and, moreover, our ideas of time.

From the *organic* sciences we get our laws of species-variation; laws which rule over both kingdoms, the vegetable and the animal, and therefore over man. Comparative anatomy, describing its collections, defines for us the limits of similarity and dissimilarity between the fossil species and those now existing; between the monkey tribes and the tribes of mankind; between the skulls found in the bone-caverns, and the skulls of Casper Hauser and Daniel Webster; between the skeleton and the skin of Hottentots and of Englishmen.

From the *historical* sciences, of which Ethnology is one, we get those facts which, on the one hand, teach the permanence of those great distinctions upon which our largest classification of human races is founded; and, on the other hand, teach those easy and rapid modifications of the human form and features, through civilization or decivilization, which may well make us liberal in our judgments, both towards those who insist upon one Adam from whom all blacks and whites, yellow men and red men, have descended, and also towards those who insist upon the generation of man from the ape. Herewith come in those volumes of archæological suggestions; pictures of men and dogs upon the tombs of the Pharaohs; images of ancient Hindu and Chinese deities; skeletons of Greeks and Romans, Gauls and Finns, buried in tombs and tumuli of every age, back through the Modern, the Iron, the Bronze, and the Stone periods. Surely we ought to be able to come to some conclusion, however modestly, as to whether mankind is and has always been of one race; and whether there are signs of a transition from degraded ape-like forms, up to the noblest figure of a man. But the list of our opportunities is not yet complete.

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From the *social* sciences we get statistics, not only of the present, but of the past conditions of human life; we see how the *arts and arms* of men have come into existence and been improved, increased, and perfected, in striking parallelism with human form and human intellect; part of that development of the idea of man, which itself forms but a part of a still grander development of the idea of universal nature. The study of *ancient commerce* reflects light upon the theory of migrations, and helps to distinguish the characteristics of races. The study of *ancient war* is, in fact, the tracing of migrations as they became accomplished facts, influencing mixtures of races, and explaining the reappearance of Mongol faces in Western Pennsylvania. By the study of *ancient law* (as the magnificent book of Lewis, just published, proves) we get laws of natural selection, which even Darwin hardly dreamed of; by which races were subdivided, and new forms contracted for, to become permanent in after times.

Lastly, from the *intellectual* sciences, we learn: 1. how to distinguish the races of mankind through language, and to track them in their later marchings and countermarchings across the continents and seas; 2. how to distinguish races by their fine arts, their ethics, their worships; but above all, 3. we get some clear notion of man's relation to the brute, and are thus enabled to introduce into the purely materialistic discussion of the development theory, based on fossils, and on comparative anatomy, those higher considerations which naturally and properly must have most weight with sensible, religious, Christian people.

The last condition of mankind, namely, that in which we see it now existing, resembles the last condition of the rock-crust of the earth, namely, that in which we see it constituting the deltas and the valley-terraces of existing rivers. What is this condition? It is one of disintegration, confusion, intermixture. Examine a handful of the gravel which comes in daily from Roxbury to be dumped into the Back Bay, and say what are its constituent elements? and where they originated? Pebbles of quartz, of porphyry, of micaslate, of gneiss, of syenite, white, black, red, green, and blue are there; tell me their several ages, their ancient starting-points, the course of the ice-

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berg, the glacier, or the current which brought them to the quarry. The data exist. Guyot has traced the ancient moraines of Switzerland back to the existing glaciers, and thus to their mother peaks among the Alps. Nature writes out in full all her family trees. With care you can interpret them to a certainty. A labourer collecting cobble-stones at the falls of the Delaware near Trenton, for the pavements of Philadelphia, may wonder how this or that one can happen to differ so widely from those about it. Vanuxem, or Conrad, or James Hall would tell him, by certain marks upon it, that it was a piece of coral; that it grew originally in what is now the valley of the Mohawk; that ice and rain had carried it down the whole course of the river Delaware from Cooperstown to tide; and that the pebbles, among which it lies, are red sand-stones of a later age from Newburgh, quartzites of an older age from Easton, blue slates from the Water Gap, iron-stones from Milford, and copper-slates from Port Deposit.

Modern cities are the gravel-banks of humanity. Disintegrated races of mankind are drifted into them. Of the 600,000 inhabitants of Philadelphia, a rude one-tenth have been brought to it on those pitiless ice-bergs, the slave-ships, from the southern continent of the old world, and represent all the principal subdivisions of the *black* races. A second tenth has been supplied by Suabia, Switzerland, Bohemia, Moravia, Austria, Hungary, and other native lands of the *Sclavonic* race. A third tenth has come from Northern Germany and Scandinavia, and represents the *Teutonic* race, in its two branches. A fourth and fifth are *Celts*, from Ireland and Wales, the west of Scotland, and the north and west of France, mixed in with Celt Iberians of Spain and Italy. The rest are lowland Scotch and English, a mongrel people made up of Celtic Britons, and Teutonic Franks and Saxons, Scandinavian Normans, with Slavic, Finnish, Tartar, and Shemitic streaks of blood. The *Shemitic* race is represented by thousands of Jews. And on the wharves are seen Cooleys from India and China, Malays from Singapore, and Canakas from Hawaii.

Two opposing laws work mightily and incessantly over the ethnology of such a place. One is the law of *mixture*, tending to obliterate all distinctions of race and to produce new types; the other is the law of *segregation*, tending to

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x Cf Fontaine d'Arethus

draw the individuals of each stock together and to reproduce those original distinctions.

Under the first law, and by the intermarriage of the black race with the whites, we have mulattoes of every grade of colour, stature, and facial angle. Whether an improvement be the consequence men are not yet agreed. The circumstances have not yet been favourable for settling that question, nor will be until black and white can mix on terms of reasonable equality, each bringing to the other its own peculiar characteristics in full and free development. With regard to the races not so widely separated by nature or by circumstances, improvement by intermixture is an established truth. In middle Pennsylvania and Virginia, for example, wherever intermarriage has taken place between North-Irish presbyterian Saxons, and the families of the old Swope and Hessian emigrants, a magnificent mongrel breed of people fills the valleys of the Susquehanna, Juniata, and Potomac, with frames of steel and brains of flame, the stuff of which heroes, poets, and philosophers are made. No one can avoid observing the rapid improvement of the Celtic race in the United States, wherever it is free to cross itself with Teutonic blood. Let all due weight be given to the other elements of progress, superior food, superior labour, superior education, still we cannot fail to recognize the crossing of the breeds as the chief hope of the nation. Civilization is the flower of migration. Every great history has sprung from some barbaric invasion. A new humanity follows every deluge. Arts and learnings are the electric lights about the wire-points where two races approximate. One kind of blood is metal to the acid of another: mix them in generous proportions and you have Hare's calorimotor on a cosmical scale; you can burn up with it the past, or electrotype with it the future. When the effervescence ceases the Creator walks away; the apparatus is useless until it is charged anew.

By the law of *segregation*, on the other hand, the Germans of Philadelphia have drawn off into the north-eastern quarter of the city, and made a Frankfort-on-the-Maine of it. The blacks have appropriated the southern wards and made a Timbuctoo of them. The Irish cluster about their churches, the Jews about their synagogues,

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without need of legislative enactments. The west end of one of the finest streets in Cincinnati is formed by rows of palaces, built since the middle of the war, and all inhabited by Jews. The principal Quaker families of Philadelphia still reside in Arch-street—a beautiful meeting-house, a mile long, and so monotonous that you might turn it end for end, or upside down, and nobody should perceive the difference.

But when groups of tourmaline or spinel segregate in the old or metamorphic rocks, they are signs of age or long stagnation. A city with established quarters of distinct nationalities cannot improve at the same rate with a city like Chicago or St Louis, where confusion of races pervades the place. Arch-street has been an iron bar between its legs to the city of William Penn. The prohibitory tariff which the south so long laid against the importation of Yankee blood was that which made Charles Sumner's speech so dreadfully true. The Indian tribes of North America fossilized themselves by isolation; and now they perish because they cannot marry into a stronger family. In the earlier ages of mankind this law of *segregation* ruled despotically. And why? Because it is the law which guards the individual life, without regard to the improvement of the race. That other law of *disintegration* and intermixture patronizes the improvement of the race and disregards the life of the individual. What do the forces of civilization care for the happiness or misery of the individual coal-miner that furnishes fuel for its steam-engine, or the sailor who brings it over the sea, or the engine-driver who is smashed on the experimental trip, or the factory girl, or the telescopic-lens grinder, or the Lord Premier who commits suicide, or the First Consul who eats his broken heart at St Helena? Nothing. Christianity, indeed, sympathizes with each, and at the same time with all, and thus observes both laws, and employs them, both for the happiness of the individual and for the progress of the race. But Christianity is a recent device of the Deity. Our theme antedates it a million years, if Desnoyer's tertiary bones were really scratched and split by the hands of men.

Questions to-night will come up such as these: Of what race of men are Desnoyer's tertiary human bones the

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vestiges? In what street of Paris or Boston will you find their present representatives? Was it that primeval race which afterwards fashioned the flint implements buried in the post-tertiary diluvium of Abbeville; and those found in the bone-caverns of Belgium? Was it the race whose skeletons lie mouldering in the tumuli of the Stone period here or there? Is it one of the great existing races of the present day? How many existing races really are there? How can we distinguish them apart now that they are so intermixed? And if we can distinguish them apart, can we also arrange them in any hierarchy, or natural order of mutual excellence? Are any of them essentially and incurably bestial? Can there be established any rational connection between the lowest races of mankind existing now and the oldest skulls and skeletons? Can we in any way make these an intermediate link between the Christian gentleman and the abominable chimpanzee?

These questions have been discussed by many writers, and been taken up in almost every order. Each writer has given greater prominence to one or other of them, according to the special nature of his studies. Perhaps the clearest statement of them has been made by Carl Vogt, Professor of Comparative Anatomy in the Academy at Geneva, in a series of lectures delivered at Neuenburg, in one of the valleys of the Swiss Jura, and published in two volumes at Giessen, in 1864. His collection of facts, down to the most recent discoveries of last year, is comprehensive. His searching criticism of the various and opposite opinions held still by men of science, illustrate the whole subject. His reputation as an anatomist is of the highest rank. His independence is as admirable as his scientific method is clear and straightforward. Whether his classification of the human races will fare better than those of his predecessors or not, the strong ground of his general conclusions, I think, cannot be shaken. They are not, in fact, *his* conclusions; they are the provisional sentiments of a large number of the leaders of science, for the moment produced by the sum total of our information up to date, and subject of course to constitutional amendment according to law. As such I offer them for your consideration this evening.

I stated in general terms in my last lecture that no dif-

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ference could be made out between man and the monkey as to the ground-plan of their forms. Their hands are planned like human hands, their feet like human feet, their brains like human brains, their jaws and teeth like human jaws and teeth, and so of all other parts of their organization.

The same, of course, can be asserted respecting the different races of men; they are all built upon one plan. If this makes them all of one race, then it becomes also necessary to assert that men and monkeys are of one race, because they are built upon a common plan.

The differences which do exist, both between men and monkeys, and between one race of men and another, as well as between one race of monkeys and another, are differences *in the development of this ground-plan common to all.* Take the idea of the skull for an instance: it may be more ape-like or more man-like; it may be brachycephalic, i. e. short for its width, or dolichocephalic, i. e. long for its width; it may have a low, retreating forehead, or a high, erect forehead; it may show a perfectly symmetrical curve, when seen sidewise or endwise, or it may be lumpy and knobby, like a laurel root; it may be high and pointed; or immensely developed behind the ears; or all brought forwards over the eyes; or bulging over the ears sideways; it may be marked by ridges and crests, fore and aft, and from side to side. All these differences you are accustomed to meet in your daily walks; and these same kinds of differences you would see if you extended your walks to the forests of the tropics. The subject is one of degrees, or rather one of details. Just as, to use one of Vogt's illustrations, when an architect is showing his scholars the essential unity of plan which resides in all Gothic domes he explains the various ways in which the idea of this plan is unfolded in the different cathedrals of Europe.

And so of all other parts of the human organism as of all other members of the Gothic edifice. We cannot take one part as our criterion; we must take the whole animal, the whole man. The shape of the skull is very important, because very changeable, and because skulls are attainable when no other vestige of man remains to be examined. But the shape of the limbs, the colour of the skin and

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eyes, the growth of the hair—in a word, the entire aspect of the person must, in the end, decide for us his affinities, and enable us to fix those limits of variation which constitute a race. Any other method of classification would be empirical and not natural.

To show you how careful we must be to take every part of the phenomenon into consideration, and to give you an additional illustration of the delicacy and shrewdness of modern methods of investigation, I will adduce a couple of facts connected with the measurement of human skulls. It does not necessarily follow that small skulls contain feeble brains, nor that small brains in one century may not become larger in another century.

The action of the brain seems dependent upon its folded surface. Wagner has shown by the following table that women's brains weigh less than men's, but that their surfaces when unfolded and spread out equal or exceed those of men:—

Number.	Weight in gramms.	Convex surface in 16□mm of great squares.
1. (Dirichlet)	1520	2553
2. (Fuchs)	1499	2489
3. (Gauss)	1492	2419
4. (Hermann)	1358	2406
5. Man	1340	2451
6. „	1330	2309
7. „	1273	2117
8. Woman	1254	2498
9. (Hausmann)	1226	3065
10. Woman	1223	2272
11. „	1185	2300
12. Mikrocephalus (idiot)	300	896
Man,	1499 gramms weight and	2489 of surface.
Woman,	1254 „ „	2498 of surface.

It is possible thus to explain the small head and womanly intellectuality of the Hindu race.*

Another such fact is one that Broca† discovered by his measurement of skulls obtained from two Parisian graveyards as old or older than the time of Philip Augustus, i. e. of the twelfth century. It goes to show that the average

* Vogt, vol. i. p. 137. † Ibid. pp. 106, 108.

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size of the skull of the same race may increase in the course of time. 115 of these skulls from one graveyard gave the mean size of 1461.53 cubic centimetres; 117 skulls from another graveyard gave 1409.31 cubic centimetres; while that of 125 skulls of paupers, buried in a modern Parisian cemetery (1788—1824) in spite of the debasing influences of poverty, measured 1484.23.

Morlot in comparing the shape and size of a multitude of ancient Helvetian skulls which he examined, with the skulls of their descendants, the Genevese of the present day, comes to the same conclusion, and ascribes the improvement to the influence of Christianity.

Great discussion has been had over this matter of change in the form of the human skull, on the one side under the influence of favourable circumstances, and of unfavourable circumstances on the other. The factitious reputation which the English Pritchard acquired came from his assiduous collection and collation of supposed examples of the degeneracy of people through misfortune, and of the improvement of other people through good fortune. His instances of the Turks, of the Jews, of the Irish, are well known. He thought that facts warranted him in asserting that the bow-legged and savage-featured horsemen of Independent Tartary had become in two or three centuries the straight-legged handsome aristocrats of Constantinople. That the white Jews of Palestine had become under an Indian sky the black Jews of Madras. That the tall, stout, clever Irish of Meath, when driven by the English from their farms to huddle half-starved in mud-huts in the south-west corner of the Green Isle, became in a few generations the ugly, low-browed, meagre-limbed, pot-bellied, brutal creatures, whom the famine drove in crowds to this country, and whose well-fed children now constitute a class of our society not at all inferior to any other, as far as physical and mental development is concerned.

This story of the Irish has been again taken up by one of the most exact ethnologists of our own day, M. Quatrefages of Paris. I will give it in his own words:—

'When the British suppressed the Irish rebellions of 1649 and 1689, great crowds of native Irish were driven out from Armagh and the south of county Down, in one direction, into the mountains between Flews and the sea,

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and in the other, into Leitrim, Sligo, and Mayo. From that time on, these people suffered the evil influence of hunger and ignorance, those two great spoilers of mankind. Their descendants may be easily distinguished at the present day from their relatives left in Meath in good estate. They are marked by open, protruding mouths, projecting teeth, and fletschendern gums, high cheek-bones, suppressed noses, and barbarous foreheads. In Sligo and northern Mayo, two centuries of wretchedness have stamped themselves upon the whole bodily constitution, within and without, furnishing us with an example of human degeneration through known causes, so instructive for the future, as to compensate for the misery of the past. Their mean height is about 5 ft 2 inches; they are thick-bellied, crook-legged, like mis-begotten children; clad in rags they go about, the ghosts of a once full-sized, well-bodied, and courageous people. In other quarters of the island where this same Irish race has suffered no such lamentable miseries, it furnishes the fairest examples of human strength and beauty, not only physical but intellectual also. Yet this account, which makes one's hair bristle with horror, is sufficient to show how easily it can be lowered to a level with, and be made to show all the characteristics of, the lowest negro races, the most abandoned Australian tribes.'

I have selected from a great many others and given you in full this description of a case, which has made perhaps the profoundest impression upon the imagination of ethnologists, because it will not only make the question before us plain, but will show how differently different investigators conclude their inferences from the same facts.

Pritchard, and his numerous old-school followers, see in this history only a fine example of man's susceptibility to change, and they prove by it and other like examples, that satiety and hunger, heat and cold, field-life and forest-life, mountain-air and sea-air, have been ample means for changing the descendants of the first pair, Adam and Eve, or of the second pair, Noah and Anna, into all the black, white, yellow, and red descriptions of mankind which now inhabit the globe. But in order to maintain this theory they are obliged to ignore or explain away a multitude of adverse facts, going to show that this capacity of man

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for change is so limited that any race subjected to adversity beyond a certain point, not only degenerates but perishes entirely, like any other kind of animal.

This opposite view has been taken up with the same excessive advocacy, and want of logical balance, by Dr Knox and his school, who go to the extent of maintaining that no migration is possible; that the number of original human races is very great; that each of them was created to occupy a certain definite area and can occupy no other; that any translation of it from that area to another is necessarily fatal; and that the degeneration of the Irish vagabonds from Meath was as certain a premonition of extinction as the degeneration of the European emigrants to these United States must end in the extinction of our race, unless it be enabled to drag out a lingering existence here by large and constant accessions of fresh life from Europe.

Such speculations are not scientific. We call Pritchard an old fogy; we call Knox a crazy fellow. We must not only have alleged facts, we must have actual facts, sifted, analyzed, weighed, and measured, before we can begin to see our way through such a world of mystery as is this question of races. This sifting of facts is what characterizes the ethnology of the last few years.

You will ask, what opinion does Quatrefages entertain of the case which he cites so eloquently, and as if he fully coincided with Pritchard's cherished sentiments? Be not surprised when I tell you that he *doubts the facts themselves*. He quietly asks if it be not possible that the two classes of Irish peasantry thus contrasted, the one degraded to a level with Australians, the other allied to the most favoured Caucasians, ever really had anything to do with each other. 'No,' says he, 'the Irishman of Meath alone represents the old stock, he has remained at home, he has remained unaltered. The Irishman of Flews, on the contrary, placed in other circumstances, has changed himself and formed a new race out of the old one, in harmony with its unhappy surroundings. There are therefore now two races in these neighbouring counties.'

And what has Vogt, again, to say to this? Vogt smiles at Quatrefages' ingenious subterfuge. Supposing the details of the Irish story to be true, how does it affect the

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question of the radical distinction between the skull of a white Celt and the skull of an Australian negro? Who has examined the skulls of these degraded Irishmen of Flews, and compared them in the light of the latest science with the skulls of the Irishmen of Meath, their alleged cousins on the one side, to make out the differences, and with the skulls of Australians on the other side to make out the resemblance? Has Pritchard? Has Quatrefages? Has Broca? Has Morton or Bachman? Has Scherzer and Schwarz? Has Busk, or Camper, or Welcker, or Von Baer, or Virchow, or Lucæ, or Gratiolet, or Huschke, or Aiken Meigs, or anybody? Nobody! Then what does our actual knowledge about it amount to after all? To nothing. There being no competent witnesses the case is ruled out of court.

We might spend much time in showing how all the old and well-established points of controversy are broken off, in pretty much the same manner, by want of proper preliminary criticism. In the Turkish case, for instance: who knows how much of the old Turkoman element still lingers at Constantinople? And where did the Turks obtain mothers for their children but from the population of the empire, which they spent more than one lifetime in overthrowing; to say nothing about the mountain beauties of the Caucasus.

In the case of the black Jews of India: who does not know that the black Jews of Abyssinia boast that they are the descendants, not of the patriarchs, but of the Queen of Sheba? Their Judaism is therefore a superstition overlaid upon their blood, and cannot be adduced in proof that their Israelitish blood has ever changed even by the thousandth part of an atom of iron.

Take the case of the negroes in America, of which Lyell, and Reiset, and Réclus have written so glibly; and who knows anything with certainty about it? A land, indeed, of darkness and of the valley of death. We must wait until the negroes take up the question themselves; until a truth-telling census gives us facts; until a thorough and searching discrimination has been exercised. Men pretend to say that the negro race has been marvellously modified by mere change of *habitat*, by new climates, soils, and foods; or as they are sometimes inclined to fancy, by

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mysterious or, at least, unknown agencies. Réclus asserts his positive knowledge of the fact that, as a race, the negroes have advanced one-fourth way towards the form and appearance of the whites. Reiset opines that the pure-blooded Africans of the Antilles retain their native character, only *weakened*. Some writers confidently insist that the negro skin is not so black, his nose not so small, his forehead higher, his lips thinner, than they used to be. Even if it were possible to discover and prove all this to be true, what would it signify when we consider the consistent and universal profligacy of the whites who have lived among them, and have been their absolute masters; when we consider the immense variety of thick and thin lipped, high and low browed, large and small nosed tribes in Africa, from which the dreadful sum of all that evil was made up; and lastly, when we consider the operation of the internal slave trade, that Virginian pudding-stick, stirred by the hand of Mammon, for ever mixing up these various original and derived ingredients together, to produce a chaos of results, before which any man, were he not a Charleston clergyman or a foreign tourist, would stand awe-struck and silent.

Lastly, take our own Yankee case. Listen, if you can, without indulging in a hearty laugh, to the following description, by Pruner Bey, of the results of European emigration to America. 'Already, after the second generation,' says this shrewd observer, 'the Yankee shows the features of the Indian type. Later still, his lymphatic system becomes reduced to the minimum of its normal development. The skin grows dry as leather; the warmth of the complexion and the ruddiness of the cheeks are lost—exchanged, in the man, for a clayey tint; in the woman, for a sickly paleness. The head grows smaller, round or even pointed, and covers itself with straight, dark hair; the neck elongates, and one can see a great development of muscle in the cheek and jaw. The temples deepen; the cheek-bones grow massive; the eyes sink into deep orbits and lie close together. The iris is dark; the glance grows piercing and wild. The long bones become still longer, especially those of the upper limbs, so that gloves of a peculiar shape, with very long fingers, are manufactured in France and England for the American

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market. The inner holes of these bones become narrow; the nails grow light, long, and pointed; the woman's pelvis approximates in shape to that of the man.' 'And thus,' adds Quatrefages, 'the Anglo-Saxon type in America has become changed, and a new white race has sprung out of the old English race, to which we may give the name of Yankee race.'

Now all this, to one accustomed to see the beautiful women of New England and the fine-looking men of the middle States, is sheer nonsense. Every intelligent citizen of the United States has travelled enough to know that the picture which Pruner Bey has given us represents no such general reality as to be of the least ethnological importance. It is a picture of individual heads, faces, and forms, which contrast strongly with other and widely different heads, faces, and forms among whom they live, and, moreover, such as may be seen all over Europe. There is not even a well-marked class of society in the United States to answer the description. And as for a Yankee race, no such thing exists, in the sense assigned to the word by these authors. Even in New England there are recognized nearly half a dozen *varieties* of man. I could take you to a valley in Pennsylvania, fifty miles long by five miles wide, crossed by an invisible ethnological line, north-east of which the inhabitants are stout, strong-headed, handsome descendants of north Irish Presbyterians; while south-west from it the inhabitants are Awmish descendants of Swiss mountaineers, equally good-looking in their way. Behind this valley, and on the summit of the Alleghany mountains, 3000 feet above the sea, Count Galitzin established his colony of Polish Catholics, and their monastery is still in use, and so is their cathedral. Twenty miles farther north, in the heart of the forest, is the settlement of a wealthy Englishman. Thirty miles farther north, still deeper in the forest, and on still higher ground, spread out the fields of St Mary's, tilled by over ten thousand French Catholics. Forty miles north-east of this, and in the centre of the great forests of the Sinnemahoning, Ole Bull founded his unhappy colony of Swedes. Forty miles to the north of this again would bring us to the settlements of the Connecticut men, up on the head waters of the Alleghany river; and an equal dis-

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tance to the south would return us among the descendants of the race which inhabited the Black Forest and the Vosges.

Go from State to State, and such facts will face you everywhere. You may draw two lines across the State of Ohio, so as to cut it into three regions, each with a separate ethnological development, distinct in appearance, in their manners and customs, in peculiarities of language, and in their religious habits.

But what is that Anglo-Saxon race, concerning which we have heard so much, and to which no one has yet succeeded in giving a form? Vogt well says that it has no existence; Max Müller confirms the statement, if it needed confirmation. It is a chaos of races, this so-called Anglo-Saxon race. And so is the population of the United States a chaos of races; an ethnological *moraine*, or gravel terrace, or delta deposit, to recur to the illustration already used. We cannot yet learn from it anything respecting those great laws of human variation which, sooner or later, will be discovered.

What the other sciences wait for is this; that ethnology should adopt some correct method of investigation. It has been well said that ofttimes a proper method of investigating is a grander and more useful discovery than any which the investigation itself may yield. For the discovery of a right method is so much absolute abstract science accomplished, involving as it does the knowledge of principal truths in their prime relations; whilst the discoveries which result from an investigation are commonly themselves mere isolated facts; and facts are good for nothing until they are synthetically converted into laws.

Now the difficulty of devising a proper method for ethnological research arises from the fact that there are two opposite tendencies in nature—the one towards differentiation or individualization, the other towards integration or generalization. Nature is for ever at war with herself, pulling down with one hand while building up with the other. She obeys blindly the law of Christ, not to let her left hand know what her right hand doeth. She keeps races separate; she mixes them together. She gives to man an intense love of home, a powerful associative principle, the rage of love, the fire of friendship, the pride of country,

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the bigotry of worship, the jealous guardianship of property —all this to develope the family and preserve the local type. On the other hand, she inspires the soul with a thirst for change, with curiosity concerning the distant and the new, with the love of conquests, with the hopes of betterment—all these to develope the powers of the individual man, and at the same time to spread out population as widely as possible.

These are at home with the natural law that offspring should bear the characteristic features of both father and mother. And if this were the only law of inheritance, it would be easy enough to make out the exact forms and limits of each race, for its individuals would be alike. But there is another law in force, by which each child inherits only a limited selection of the characteristic features of father and mother; and one child more of one, and another child more of another. One child takes on the physical form of the father with the mental character of the mother; another child reverses the order, and resembles the father in mind, and the mother in body. This latter law, therefore, modifies and confuses the former, establishing individual variety in the midst of stirpal uniformity. But in doing so it also provides a potent means for bringing into the history of a family a more or less complete divergence from the original type; in fact, the production of a new race out of an old one. Were this the only law, ethnology would be an impossible science. Utter confusion would attend the history of human life.

But a third law has been moreover discovered. It is called in the natural history of the lower creatures, the law of *alternate generation*, by which the jelly-fish begets a star-fish, and the star-fish in turn begets a jelly-fish. This law is strangely powerful over human character. I think that, as a rule, a child is more likely to resemble its grandparents than its parents. By this law hereditary diseases, like scrofula and insanity, and mental and bodily peculiarities of every kind, appear, lie hid, and re-appear, in a series of alternate generations. This is, in fact, that conservative force in nature which strives perpetually against abnormal variation, and insists upon a return to the old idea. This is the mysterious under-current by which Mongol heads and faces are forced to the surface of

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some Teutonic or Celtic stream. I have seen profiles in Philadelphia which might have been copied from the alabaster tablets of Khorsabad—pure Assyrian faces, no doubt the product of Hebrew blood, descended through forty centuries from Ur of the Chaldees.

The power of this preserving force of type, whatever may be its nature, stamps the great areas of the earth's surface with those unmistakable generalizations, to which no amount or intensity of individual variation can make us blind. It is the genius of the *race*. On the oldest monuments of the Pharaohs, the pictures of different kinds of dog are recognized by any child as the pictures of the dogs with which he plays to-day. The pictures of the Negro, the Jew, the Egyptian, the Scythian, are perfect likenesses of the Nubians, Fellahs, Jews, and Turks of to-day. There you may see, portrayed in colours 6000 years old, the same slave-traders driving down the same slave coffles as in the same valley of the Nile to-day. If all the races of mankind are variants by the law of variation, from the form of Noah or of Adam, then how infinitely remote must have been the time when Noah or Adam lived. On the other hand, if the law of constancy in form has kept the races apart from the beginning, how numerous must be the list of actual human races; how closely must they have been confined to their respective centres of creation; and how difficult it becomes for ethnology to devise any efficient and reliable method of research, for explaining the mixture of races in the more civilized portions of the earth!

Let me fix your attention for a moment on this curious map of France, published in the memoirs of the Royal Asiatic Society many years ago. It exhibits the departments of the French empire, each overspread with a different shade of colour, and marked with a certain cypher. This map affords a brilliant example of ethnological method. You are perhaps aware that the French, as a people, are mulattoes; but a general observation like that, advances us scarcely a step in true science, although it may be quite sufficient to stifle the clamour which slaveholders have raised against the possibility of 'miscegenation.' It is in the highest degree desirable to know in what sense and to what extent the French people are mulattoes; in what provinces and departments they are most dark, and in what

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other provinces and departments they are most white. If we could discover by some accurate method—say by that of percentages—some law of increase of the dark element in French blood in some one direction, and of the white element in some other, we should come into possession of means for tracing the mixture to the former seats of a dark race in the first direction or on that side of France; and of a white race whose seat was in the other direction on the opposite side of France. Now that is precisely what this map enables us to do. You observe how the percentage-shades form belts running across the kingdom from N.W. to S.E., and how the darker belts are those upon the S.W. or Spanish side, while the lighter belts are on the N.E., or towards Germany. Until this map was constructed it was supposed that the aboriginal population of France was to be sought for in the central region of the Cantal and the mountains of Auvergne. But you see how steadily and equally the aboriginal dark or 'brown' race of France, as it is called, has been pressed down from the Rhine and the Channel, towards the Bay of Biscay and the Pyrenees. You see how the increase of its mixture with the fair German race has been in proportion to the distance from the Rhine. As for the white race, it of course belonged to central Europe, and was either Sclavic or Teutonic, perhaps both, certainly in part Teutonic. But the dark race with which it mixed,—what shall we think of it? Where shall we find it pure? The map suggests the only answer to these questions. The colour deepens to a maximum where the Pyrenean mountains meet the sea. These mountains are the home of three divisions of one race, speaking three dialects of one language, called the Basque; a language possessing no well-proven affinities with any European tongue; but suggesting some resemblances with the language of the Finns, a people perhaps related to the same circumpolar race to which the Esquimaux belong. These Basques are sturdy mountaineers and have never been driven from their homes; but their mountains stood with their feet in the sea, and the Basques became great fishermen; the Cabots found the banks of Newfoundland covered with their boats, and it is said that they sold cod by name in the markets of Hamburg and Havre, before Columbus made his first voy-

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age. The native word is not 'Basque' but 'Escamara;' almost identical with Esquimaux. The west end of Brittany is peopled by a fragment of this same race, preserved in the same manner among rocks and in the surf, but who have exchanged their language for a Celtic dialect. St Malo was celebrated in the middle ages for its breed of sailors, who shared with the southern Basques in the fisheries of Labrador. Another, and exceedingly small, fragment of this mysterious and most ancient brown race exists in Ireland, in the shape of a group of hamlets on the northern shore of Galway bay; the people intermarry among themselves and have little in common with the Celtic population of the country. Now if we track the brown race southward, we find it as a modifying element in all the Spanish peninsula, especially among the Sierras and in secluded Portugal. Whatever was its mixture with the Celtic blood of France, it formed with Celtic blood the entire humanity of Spain, and hence the name which the Romans gave it, Celt Iberia. If we take this latter name Iberia, and compare it with a multitude of others,—I will not weary you with the details,—we arrive at the conclusion, that in the brown race of western Europe we have a division of the great aboriginal Berber race of northern Africa; a conclusion which it would have been impossible for the best ethnologist to have advanced with any confidence, until some such method of investigation had been adopted as this map illustrates.*

Not by suppositions and conjectures, but only by a rigorous self-denial of the imagination, and by restricting it to its proper function, the invention of true methods of investigation, can the questions be answered which eth-

* But after such investigations have been made, these direct observations are of value. For example, in 1862, MM. Martins, Desor, and Escher de la Linth studied the Berbers in their native haunts. 'The Sufites,' writes Desor, 'are genuine Berbers, and, as such, white with black hair, like the southern Europeans; and were it not for their burnus, Martins might have recognized them for a troop of scholars from some village of Provence or Languedoc. But one thing drew our attention, the very extended form of the head; they are true longheads (dolicho-cephaloi), as one sees chiefly only so well pronounced from the ancient graves; the face is angular and thin, the teeth vertical and beautifully white like those of all these peoples. The body is lank, and capable of marvellous endurance.' (Letter to Liebig, p. 29.) I say nothing here of the superb train of argument coming out of the recent researches into the dolmen or Druid architecture of Europe and Africa.

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nologists are asking of each other respecting similar mixtures of the white and black races, in other parts of the world; in India and Burmah, for example, where also the aboriginal element seems to have been black, and to have been mixed first with yellow Turanian blood from the north-east, and afterwards with white Arian blood from the north-west. Were this a course of lectures on Ethnology proper, I would gladly take up these questions one by one. But I must occupy the few minutes I have left, in sketching out the direction which the inquiry takes in bearing upon the connection of the present races with those of the Stone or Diluvial age, and with the apes and monkey tribes.

The most nobly organized races are the most migratory, because they have the faculties of self-protection in the highest state of efficiency. The white Shemite, the Arab merchant, traffics in person every year from Morocco to Singapore. He has imprinted his alphabet, his cipher, his unitarianism, upon a belt of the earth's surface extending from the Senegal and Gambia to Lake Baikal. He has ennobled, by mixture with his own blood, the Khoord, the Nubian, the Berber, and the Celt. How far back this beginning of his influence would go, if we could follow it, we cannot yet make out. But what is true of this subdivision of the great white race is true of the white race as an entire whole. It has mowed a broad historic swath along the temperate zone, subjugating, proselyting, elevating the darker and poorer races which had previous possession of the earth, the less mixed and fragmentary remains of which we find among the mountains, or on promontories, or in islands in the sea.

North of the belt of this historic white race lies the nearly undisturbed population of the Arctic zone. To the south of it dwell enormous separated masses of black men. I omit all mention here of the red Indians of America, so as not to complicate the subject.*

* De Gobineau, in his 'Essai sur l'inégalité des Races Humaines,' Paris, 1853 (Phil. Lib.), devotes the 16th chapter of vol. i. to a description of the characteristic features of the three type races; but adds that at the earliest date we see them they were not pure, and that now they have been mixed a hundred times. (See foot-note to Lecture 8, p. 3.)

The Melanian variety, he says, is at the bottom of the scale. The animal form of its pelvis fixes its destiny from the moment of conception.

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These races seem to be as different in species as wolves and foxes differ from jackals and dogs. There is abso-

(A French *jeu d'esprit*.) It never leaves the limits of restricted intellectuality. But it is no brute, pure and simple, this negro with narrow, retreating forehead, carrying in the middle skull indications of certain grossly powerful energies. If its thinking faculties are middling, or reduced to nothing, it possesses in desire, and therefore in its will, a terrible intensity. Many of its senses are developed with a vigour unknown to the two other races, especially the senses of taste and smell. But precisely on the avidity of its sensations lies the stamp of its inferiority. All aliments are good for it; nothing disgusts, nothing repulses it. (Pruner, i. 133.) Its lust is to eat, to eat excessively, with fury. No carrion is unworthy of its stomach. Its lust for gross odours accommodates itself to those most odious. To these chief traits is added an unstable humour, a fixless variability of sentiment, annulling the distinction between vice and virtue for this race. The very rage with which it pursues the object which has put its sensitivity into vibration and inflamed its cupidity, is a gauge for the prompt appeasing of the one and the rapid forgetfulness of the other. Lastly, it values as little its own life as another's. It kills to kill; and so this human machine, so easy to set in motion, is, in the presence of suffering, of a cowardice taking refuge in death, or of a monstrous impassibility.

The yellow race presents the antithesis of all this. The cranium projects in front. Large, bony, salient often, developed well in height, vertical over a triangular face, wherein the nose and chin have none of those gross and rude projections of the negro. A tendency to obesity, though not a special trait, recurs more frequently in the yellow than in the other races. Little of physical vigour; dispositions to apathy; none of those strange moral excesses so common to the blacks. Feeble desires; a will obstinate rather than extreme; a taste perpetual but tranquil for material pleasures; rarely gluttonous, but with more choice of aliments than the negro has. In all this, a tendency to mediocrity; a comprehension quick enough, but neither elevated nor profound (quoting Carus, Weber Ung. etc., p. 60); a love of the useful; respect for law; conscious of the advantages of a certain dose of liberty; a practical race, in the narrow meaning of the word; no dreamers nor lovers of theories; inventing little, but able to appreciate and adopt what serves its turn; their desires limited to living as softly and commodiously as they can; a populace and small bourgeoisie, which every civilizer should choose for the basis of his society; but not to give society nerve, beauty, or action.

The white race has reflecting energy, or energetic intelligence; the sense of the useful in a larger, higher, more courageous, more ideal sense; a perseverance in plain view of obstacles, able to find means for removing them out of the way; with a greater physical power; an extraordinary instinct for order, not only as the gauge of peace and rest, but as the indispensable means of conservation; and yet a well-pronounced taste for liberty, even in extreme; a declared hostility to that formal sleepy Chinese organization, as well as to a haughty despotism, the only bridle for the blacks. The white men are distinguished by a singular love of life, prized more because put to its proper uses by them. Their cruelty,

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lutely *no* reason for supposing them to be of one species, except an absurd legend, ascribed to an ancient Shemitic law-giver, and preserved among a number of similar legends of various dates, inconsistent with themselves, with each other, and with the legends of surrounding nations. The legend of Adam and Eve makes all mankind descend from Cain first and Seth afterwards, and yet says that Cain obtained his wife[x] before Seth was born, and in a country whither he had fled from Adam and Eve, the only other human beings at that time on the earth. Then the descendants of Seth are made to live, each one, a thousand years, and when the earth was peopled, partly by a crossing of the human stock with angelic blood, the work of the Creator was entirely spoilt, and had to be begun again; the Antediluvians were all destroyed; and Noah and his family became in their turn the sole progenitors of all our present races. As one of Adam's three sons was murdered by his brother, so one of Noah's three sons was cursed by his father, and his descendants handed over into bondage to the descendants of the other two. Of this most orthodox adventure a most diabolical handle has been made to justify the enslavement of the black race by the white. This hotchpotch of old Hebrew legends, made sacred to our hearts by lectures from the pulpit and recitations at the mother's knee—this tissue of absurdity, called the biblical history of the origin of mankind, is absolutely the sole and entire argument for not considering the human races as much distinct in kind and origin as are the llama and alpaca, or the vicuna and alpaca, or the springbok and the goat, or the hare and the rabbit, or the American bison and the European cow, or the wolf and

when exercised, is conscious of its own excesses, a sentiment very problematical among the blacks. Yet they find reasons for leaving this occupied existence without a murmur—for honour, first, which under slightly various names has occupied an enormous place in their ideas since the beginning of the race. Honour and its fruit, civilization, are not known to the yellow and black races. But this intellectual superiority is matched by an inferiority in their sensations. The white race is far more poorly endowed in sensual faculties than the other two. It is, therefore, less solicited and absorbed by corporal action, although its structure is remarkably more vigorous. (Martins says the European surpasses the black in the intensity of the nerve fluid. Reise in Brazilien, i. 259.)

Here Gobineau has his tertiary and quaternary mixtures of these three grand secondary types.

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the dog, or the dog and the jackal, or the camel and the dromedary; for all these acknowledged species not only breed together, but produce, under certain conditions, fertile offspring.*

The Swiss naturalists thought that they had established four well-defined types of Helvetic skulls: the Sion type, rather long, and low in the crown; the Hohberg type, with a pent-roof shape; the Dissentis type, bullet-headed, or square as it is usually called; and the Belle-air type, of so mixed a character that it was soon discarded. The other three are still under discussion. The Sion type is identified by the German naturalists as that of the Hügel-gräber, or grave-mounds of the valley of the Rhine; and the Hohberg type (once supposed to be Roman) with that of the Reihen-gräber skulls. The Sion type is common in the caverns of Belgium and elsewhere. But in the caves of the south of France appears another type, a small round head, like that of the Laplander's; and this is the head associated with the rein-deer and other animals of that remote epoch. Pruner Bey, therefore, in the congress of 1867, at Paris, insisted strenuously upon the necessity for recognizing this small round head as the earliest type of man known to us. But Professor Vogt objected that the round form is theoretically the most perfect of all forms, giving most weight and least superficial exposure; but he especially recalled to view the fact never to be forgotten, that the low Neanderthal skull (with others of a similar but not so excessively degraded a form) is equally ancient, and of a wholly opposite type. If the Hyperborean race followed (or led) the rein-deer to the south during the coming on of the glacial period, there must have been some other race also already in the field, to meet, and perhaps to disappear for a time before it, and then perhaps to reappear, after the worlds of ice had melted, and the Arctic zone had retreated within its polar circle. The encomiums lavished on the Engis skull are not only a little extravagant (for although it is finely shaped, it is not large), but its exact age also has never been satisfactorily determined. If, however, it be both very ancient and also Caucasian, then it establishes a third, superior, ancient race; or, much more probably,

* Vogt, vol. ii. 216. The only case of sterility, well authenticated, is that of the mule proper, the offspring of the horse and ass.

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it merely proclaims the eternal possibility of individual greatness even in the worst of times.

I account it probable, then, that the races of mankind have always been distinct; and that they probably made their appearance on the planet successively; perhaps the black and meagre races first and the white races last. It would not be strange also to find their history running parallel with that of the apes and monkeys. For it is not to be denied that in the three types of manlike ape, viz. the orang, the chimpanzee, and the gorilla, the three principal divisions of the family of apes have found their last and highest development. Whether we split up the orangs and the gorillas into separate species, or only recognize in them varieties like those which separate the affiliated races of mankind, it is certain that each of the three manlike ape-forms presents its own characteristic manlike feature. The chimpanzee approaches man more closely in the form of the skull and in the character of its teeth. The orang approximates the human ideal especially in the construction of its brain. The gorilla resembles man rather in the make of his extremities. Neither one of the three can be said to stand absolutely nearer to man than the other two. All three strive to reach the human ideal, but on different sides of the common development. The orang, says Gratiolet, stands at the head of the family of gibbons and babboons, on account of the size of its forehead, the relative smallness of its backhead, and the development of its upper lobes: in other words, it has a better developed gibbon brain. The chimpanzee shows unmistakable analogies of brain, skull, and face, with the makaken, and especially with the magot, and stands in the same well-developed relation to the makakos and pavians that the orang does to the gibbons and babboons. The gorilla is a mandrill by force of similar analogies, by its lack of tail, its breadth of breast-bone, its singularity of gait, walking upon the back or outer side of its two last finger-joints. There has been, then, an unmistakable, threefold, and parallel development of the ape ideal, along three historic lines from three original family groups.* I do not myself see what forbids us from supposing that the process of

* See Schröder van der Kolk and Vrolik's fivefold resemblance in Vogt, ii. 283.

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development went on to the production of those human forms of an acknowledged want of beauty and spirituality, of an acknowledged ape-like appearance, which we find populating the very regions of the chimpanzee, gorilla, and orang, viz. the brutal black races of tropical Africa, and the negritoes of Anderman and New Holland.

The objection, I know, is at hand, that there are no intermediate forms existing between those man-like apes and these ape-like men. But I think the force of this objection is broken by several considerations. And first, by the consideration that such intermediate forms need not, for the sake of the argument, exist in masses or tribes. Individuals scattered all over the world, through all the human races, with low foreheads, small brains, long arms, thin legs, projecting, tusk-like teeth, suppressed noses, and other marks of arrested development; to say nothing of millions of idiots and cretins produced by the same arrest in every generation of mankind, sustain the argument.

Then, secondly, we must consider that such intermediate forms may have existed in immense numbers and then disappeared, for all we know to the contrary. Nay, multitudes of them may exist in the fossil state, still undiscovered. Vogt has well observed that 20 years ago not a single fossil ape had been made out. During these 20 years nearly a dozen have been found. One year ago no intermediate form between the schlankaffen and makaken was known; now we have the whole skeleton of one.* Such intermediate types are continually turning up.

And, thirdly, we must keep in mind most carefully that skulls have been found in caves, which would have been undoubtedly assigned to apes, had not other parts of the skeleton been found at the same time, compelling the anatomist to assign them to some ancient form of humanity; precisely as, in the instance of the fossil ape discovered in Greece, by its skull it would have been pronounced a pure babboon, had not its limbs been those belonging to a species of makaken.

And, fourthly, when we compare the cave and lake and diluvial skulls, as yet discovered, with the skulls of the Australian natives (accepted as the most degraded or apelike

* Vogt, ii. 279.

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race now living on the earth), the resemblance in most cases (setting the Engis skull aside) is so extraordinary, that we may be reasonably excused for suspecting that the early races of mankind were farther removed in the order of development from the noblest races now existing, than the apes are removed from them.*

Let us praise God for our place in this procession of mysteries. If natural history should hereafter teach the truth of our descent from these inferior beings, Christianity will always teach humility. Let us comfort our pride by remembering, that everything has been good and perfect in its day and generation.

* For more recent discussions of this subject, *à propos* of the two remarkable human jaw-bones found by Mr Dupont at Dinant, see Appendix.

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LECTURE VI.

ON THE EARLY SOCIAL LIFE OF MAN.

THE tree is known by its fruit. We have been considering man as a *being;* henceforth we are to regard him as a *worker:* first, as a social being, a worker in brass and iron, a maker of boats and bridges, an inventor of weapons, and a framer of laws; then, as an intellectual being, a poet, or maker *par excellence;* an artist, a philosopher, a priest.

It is not as easy to distinguish races by degrees of facial angle as by grades of civilization. Perhaps we have a right to say: as only some races of animals are tamable, so only certain races of mankind are civilizable. As the carnivora love blood, and the ruminants and pachyderms love foliage and grass, so do some races of mankind love tents and waggons, while others prefer cities and ships. But after all our efforts to include these social tendencies among the anatomical or physiological characteristics of mankind, they recoil upon us as mere harmonies of man with nature. So long as large areas of the earth's surface consist of desert sands or grassy plains, so long will there be nomade races to inhabit them; mountains will breed mountaineers; deltas grow cities. The fishing races do not seek the seashore, they are produced by it. The forest gives birth to the hunter, as it does to the deer and wild-boar after which he stalks.

If this be so, and if forests have disappeared from civilized lands by the agency of man, it follows, that, when the earliest races of mankind appeared, they appeared in the form of fishing and hunting savages, the form most in harmony with the physical condition of the greater part of the earth's surface at that time. There were, no doubt, then as now, natural paradises existing here and there

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wherein some section of a single race would take on a quicker civilization than elsewhere. But he must be blind who cannot detect the traces of that long, hard, desperate, bloody, cruel, demon-like conflict between the earliest men and all the adverse powers of the air and earth,—a conflict in which all the advantage was on nature's side,—but the victory on man's, because the genii of mind came to his relief.

All civilization comes of work. The race that will not work cannot get civilized. Yet mere work is not a civilizer. Leisure is indispensable. The French-Canadian works from four in the morning until six and seven at night, but his civilization is not high. Civilization is like navigation. It makes all the difference in the world whether there be a current with you, or a current against you. In the tropics and at the poles the powers of nature are too many for man. If he barely sleep he will do well. So also in the early ages, even in the temperate zone, mankind needed reinforcement. The black race, which cannot advance under the equator any more than can the pigmy race around the pole, civilizes itself when it is transferred to the 40th parallel of latitude, provided there be given to it a chance to work. The progress of the black race in the United States, under all its disadvantages, has been respectable. Give it the freedom of the plough, the anvil, and the loom, that is, the right to enjoy the results of varied and honest labour, and you will give it the enjoyment of so much leisure afterwards as the highest civilization needs.

No race has ever yet consented to work for nothing cheerfully. All the sense of justice man has comes from resistance to that attempt. If the reconstruction of Southern society is to be a success, it can be so only on condition that the white man share the soil, the shop, the schoolroom, and the forum with the black. That the black race is willing to buy civilization at its natural price, that is, with work, has been demonstrated. But to show you how delicate a test of justice work can be, I will tell you a story, which a friend of mine, an engineer upon a Southern railroad, told to me.

A railroad was projected through the swamp-lands of Florida. Slaves were hired from the planters of Georgia

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to do the work. A day's task for every man was measured with a ten-foot pole. The slaves rose early and by working diligently could complete their tale of work by two or three o'clock, and have the rest of the day for their amusement. They soon discovered this advantage, and threw their whole soul into the business. Before noon nothing was to be seen but the flying dirt; afternoon nothing but song and dance and general cheer. This was too good to last. The avaricious contractors made new poles, 13 inches instead of 12 to the foot. The day's task was unaccountably lengthened by an hour or more. The blacks could offer no explanation, and made no resistance, for the work was still within the range of cheerful diligence. Another month passed by and a third set of poles were distributed. The foot had now become 14 inches long, and the day's task lasted until sunset.* The defrauded labourers, seeing that there was no use struggling with an unjust despotism, returned to plantation-habits, shirked all the work they could, lost heart, and fell back into that barbarism, the essence of which consists in giving up the soul a prey to the forces of nature. The contractors had overshot their mark; and so one of these monuments of the high civilization of the nineteenth century served only to remind the spectator of the aboriginal condition of the races of mankind before they had learned to hope to better their miserable plight.

Rain, hail, and snow, and the furious, piercing north wind were the slave-drivers of that age. The perpetual growth of the forest, and the rapid increase of wild animals, were the measuring-rods which mysteriously lengthened out their task. No wonder that despondency grew out of ignorance, and barbarity out of despair. It is hard to comprehend the possible beginnings of civilization in a wilderness of forests and mountains, pelted with storms, and horrible with the cries of wild beasts. Yet such was

* The difference in the tasks, it should be remembered, is to be *estimated in cubic measure.*

	in.		cub. in.
One cubic foot	12 × 12 × 12	=	1728
„ „ measure	13 × 13 × 13	=	2197, nearly 28 per cent. more than a true cubic foot.
One cubic measure	14 × 14 × 14	=	2794, nearly 60 per cent. more than a true cubic foot.

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Europe down to a recent date, i.e. to within a few centuries of the Christian era. Such was all North America two hundred years ago, with the exception of a few river bottoms, a few glades, and a few estuary marshes on the seacoast. In Europe also such places early became refuges and nurseries for man. It is therefore in the open plain of Languedoc, on the borders of the delta of the Rhone, and on the great chalk basin of central and northern France and southern England that relics of the most ancient races have been chiefly found. But even here they are commingled with the remains of tigers and hyenas, wild boars and bulls, the bear, the wolf, and the deer, and even of the rhinoceros, the hippopotamus and the elephant, in such numbers and of such a size as to tell a plain story of the most savage existence. When we remember that the only weapons which the men of the cave had at their command were fire, and the bow and arrow, the flint hatchet, fastened to its wooden handle with a willow-withe or a shrunken piece of deer-skin, or the pike pointed with a reindeer prong, or a wild boar's tusk; and that the only farming implement they knew of was a paddle of flint, chipped thin and broad and worked by hand without a handle, our wonder grows how civilization could have found a time and starting-point.

It was, no doubt, in order to avoid their natural enemies, the wild beasts, and perhaps also to defend themselves against each other, that some tribes, whose hunting-grounds lay neighbouring to lakes, betook themselves to a peculiar mode of life. They planted upright logs in the lake bottom, supporting them with heaps of stones, and lashing them together with wicker-work. On these they laid a wooden platform, communicating with the shore by a wooden bridge or causeway. On this platform stood their wigwams. Here the women and children were comparatively safe when the men were on shore hunting, or farming, or at war. On the edges of the platform they sat to fish. In the centre of each wigwam perhaps was a layer of earth to cook their fish upon. Trap-doors in the village floor received the offal, the bones of animals after the marrow had been extracted, fragments of broken pottery, the waste of spoiled nets, and ruined weapons. Hundreds of the sites of these villages have

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been recently discovered* in the lakes of Switzerland, Bavaria, and Austria, and thousands of such relics of their domestic life, but as yet only two skulls.† It is, therefore, certain, that these people were not habitual cannibals; for in that case human skeletons would be abundant. It is equally evident that they either burned their dead, or buried them on shore. That both these customs were pursued at different times we have good evidence. It is remarkable that the oldest skull yet found in these lake-dwellings presents us again with all the low-type features of the Neanderthal cranium; great ridges over the orbits of the eyes, a suddenly retreating forehead, and extremely small capacity. It contained what seems an undeveloped brain; but yet it could not have been (as some were inclined to consider the Neanderthal cranium) the skull of an idiot. These people were far from being idiots. They were only animals. The essential difference between an idiot and an animal consists in this fact: the idiot, like the unborn fœtus, is not aware of his relations to surrounding nature; his life goes on chemically, not consciously; the animal, on the contrary, is wide-awake to his position and its demands. Indeed, the quickness and many-sidedness of this self-consciousness is the nicest scale we have by which to grade the animal creation. Behold the deer, for instance; how alive to every sound and motion! how skilful to hide! how prompt to fly! And yet I have myself stood for half an hour, by my transit instrument, in the woods of the Towanda Mountains, waiting until my men cut out a line down the long steep slope into a valley; and during all this time I have seen a deer stand motionless, watching the brilliant spot of light which the sunbeams through the trees made on the brass cylinder of my telescope, not fifty paces distant, unaware of my presence, and unconscious of danger. In vain, says the poet of old, is the net spread in the sight of any bird. The consciousness of its relations is not complete in any

* Beginning with the dry winter of 1853-4, Meilen, on Lake Zurich.

† One (mentioned in Rutimeyer's Die Fauna der Pfahlbauten in der Schweitz, p. 181. Basel, 1861), at Meilen, on Lake Zurich, early stone period, called by Prof. His an intermediate type between the long and short-headed forms; and, therefore, not like the small round heads of the Danish peat-mosses; the other found by Desor, 1864, and referred to in the text.

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animal; but it is more complete in some than in others. The horse is superior to the deer; yet the horse rushes into, not out of a burning stable. The ape is superior to all animals below man, because his powers of observation have more scope, his comprehension of emergencies is more logical; he shows an inventive genius harmonizing with this higher degree of self-consciousness, and hence he more perfectly imitates the brutal customs, the virtues, and the vices of mankind. The difference between the ape and the civilized man lies in the limitation of the consciousness of the ape to his physical and passional relationships to nature; while the self-consciousness of the civilized man deals also with the subjects of abstract thought, and with the invisible and eternal worlds.* But this is the precise distinction between the cave or lake-dwellers of early Europe, and the Londoner or Bostonian of to-day; and thus we are returned once more to the idea of the affiliation of the apes with mankind in the early stages of its existence.

That these old lake-dwellers were in no respects idiotic is evident from the very nature of the case: a race of idiots could no more continue to exist than unborn children could. But their handicraft is still more conclusive evidence. In the museum of M. Troyon of Lausanne I had the pleasure of examining a piece of a door, half-burned, consisting of three boards, two of which lay side by side, but not rabbited together; the third board crossed the other two at right angles, to hold them together; but instead of being nailed or pegged fast to them, it was as regularly dovetailed into them as a carpenter of our days would have done it. I saw also among these curious objects pieces of twisted thread and knotted net. Their clothes were probably of skins, and loom-weaving was as yet unknown, but specimens of plaited cloth have been found. I saw needles of bone to sew with; and pieces of charred baked bread in the form of flat round cakes; and grains of wheat and barley. The small wild apple and pear of the Swiss woods have also been dredged up, wild plum-stones, and beech and hazel-nuts in great abundance.

* I will return to this subject in the beginning of the Tenth Lecture.

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How pleasant it would be to have a dinner-scene of those days by Teniers, or a page of table-talk by Coleridge! What a contrast would it present to the Round Table of Arthur and his paladins! or to a *déjeuner* at the Maison Doré in 1865! The table can be seen, with its dish, in the Museum of the Irish Academy; but where are the guests? It was discovered in a peat-bog, in County Tyrone, ten feet beneath the surface. The table and the dish were each scooped out of a solid piece of wood, apparently fir. An oblong table, with its ends curved inward, and set on four short legs, four and a half inches high, truncated cones, connected at their bases by a low rim, in which are two cord holes; and an oval dish four or five inches deep, in its edge two holes answering to the two holes in the rim of the table, and probably slung to it on the back in travelling. Beside the dish lay a large heap of hazel-nuts, probably an autumnal hoard just gathered for winter's use. Perhaps they were uproariously enjoying their repast, when interrupted by the rush of some carnivorous beast, scattering their merriment.*

How long the ages were during which these lake-dwellings were inhabited we do not know. We know that they existed still in the days of Herodotus; and the Swiss antiquaries believe that those of Neville and Chavannes in the Canton de Vaud continued to be dwelt on to the VIth century after Christ. There are sufficient evidences in the articles found to distinguish them as of very different ages. The iron age of the Romans is represented; the preceding age of bronze; and a still more ancient age of stone, perhaps going back to the times succeeding the retreat of the Swiss glaciers. We cannot tell, therefore, at what time wild apples, plums, and berries were exchanged for wheat and barley bread; nor when the skins of beasts were replaced by plaited cloth. The best scale of years we have is got from Rutimeyer's list of the animals on which these ancients fed, and especially by the marked change from wild to domestic flesh. In all of the lake-dwelling deposits, even the oldest, we find the bones of the domesticated ox, sheep, goat, and dog; and intermixed with these in various localities, bones of the horse and ass, bones of the elk and stag, the roe and fallow-deer,

* O'Callighan, Proc. Geol. and P. S., W. R. Yorkshire, p. 315, 1863-4.

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the ibex and the chamois, the bison and wild bull, the small swamp-hog and the great wild boar, the wolf and fox, the bear and the badger, the marten, polecat, ermine, and weasel, the otter and the beaver, the hedgehog, squirrel, and fieldmouse, the wildcat and the hare, the frog and the tortoise, the wild swan, goose, two kinds of ducks, and fifteen other kinds of birds. All that contained marrow are found split open: this is invariably the case with those of the bull and bison. In the most ancient villages, like those of Wangen and Moosseedorf, the greater predominance of bones of the wild stag and roe, over those of tame cattle, show a decided preference of the chase to a more civilized mode of life; the tame pig is wanting, goats outnumber sheep, the fox was an habitual dish.

When the bronze age opened, the Lithuanian aurochs or bison (bos bison, bos priscus) ceased to be eaten,* and the savages began to tame the great wild bull (bos urus, or primogenius), which Cæsar describes as still existing in his day, fierce, swift, and strong, and scarcely inferior to the elephant in size; in its tamed state its bones became somewhat less massive and heavy, and its horns somewhat smaller. At this time they added to the common dog, which seems to have been their companion from the beginning,† a new large hunting dog; and with it a small horse, which however must have been very rare among them. By this time the elk and beaver had become extirpated; and the fox had ceased to be a fashionable article of diet.

In looking over this list it seems very remarkable that two animals are absent from it, which we should have supposed almost the very first to be discovered. Of the hare only one single fragment of a bone has as yet been found; and we can only explain its absence by Cæsar's account of the holy horror with which the Britons of his day regarded it, and with which the Laplanders, who represent the ancient hyperborean race in Europe, still regard it. Of the domestic cat also there is not a trace, until we come down to the very youngest villages, those assigned to the VIth century.‡ And this, again, is in curious harmony with

* Protected by Czars in one Lithuanian forest, to the present day.
† The oldest of man's gods, the Anubis of Egypt.
‡ Lyell, Ant. of Man, p. 26. Desor's Palafittes. Smithson, Cont. 1866.

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the fact, that no trace of the cat exists on the most ancient monuments of Egypt.*

The absence of the reindeer, on the other hand, is merely an evidence of the far inferior antiquity of these lake-dwellings to those remains of man which have been found in the caves of France.

I have said enough to give you a picture of long middle stages in the primeval history of European humanity in Switzerland. But it is necessary to say a few more words about its phases farther north. Let us look for a moment at a more inhospitable region. Let me ask you to keep in mind, that in every age, no matter how far back we go, we find men living everywhere; living under different circumstances, but living everywhere. I shall say something in due time about migrations. But I wish you to observe just now, that theories of migration are the most unsatisfactory products of science. In days preceding the oldest migrations, of which we can obtain any glimpse, the entire surface of the earth seems to have been just as completely settled as it is to-day. In the Stone age, while the Helvetian aborigines were platting cloth and cooking domestic cattle on elaborately constructed platforms in the lake-waters of the south, a race of *utter* savages were sitting around fires, on the shores of the Baltic; with not a single domesticated animal to call their own, except the dog, and that a smaller species; gnawing the flesh and splitting the marrow-bones of wild bulls, now extinct, of foxes, wolves, and lynxes, red-deer and roes; beavers long since extinct, and seals now very rare; with penguins and capercailzies, both now extinct in Scandinavia. But I am wrong to call them *utter* savages, for they had already learned the art of boat-building,† and were bold fishermen, as we can see by the bones of herring, cod, and flounders, which are found among the mounds of kitchen trash which line the shores and mark their haunts. But they were not

* Mariette's Researches. Renan's article in the Revue des Deux Mondes, April, 1865.

† Rude canoes scooped from trunks are often found in British peat-bogs, sometimes with their short clumsy paddles, and in rare instances, a rope of moss or heather, attached to a stone close by, showing the primitive mode of anchorage. A very perfect specimen lately discovered in the valley of the Aire, is in the museum at Leeds. But such canoes are of all ages. (O'Callighan, Proc. Geol. Pol. S. W. R. York. 1863-4, p. 314.

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cannibals. No human bones make these heaps horrible. In spite of the over-confident assertion of Mr John Crawford, who said in a recent debate upon the carnivorous Esquimaux, that so far as his researches went, they were the only exception to the fact that the ancestors of every race of man had been at one time or another cannibals. The occasional eating of human flesh by shipwrecked mariners does not make a British nation a race of cannibals.* Skulls have been disinterred from peat-bogs and from graves believed to be of the same period,—which skulls are small and round, with massive bones above the eyes, resembling those of the pigmy race of modern Laplanders. The skulls of the bronze and iron ages found in the upper layers of the Danish peat-bogs are both longer and larger, and belonged no doubt to a race that invaded the Baltic regions afterwards.

We have the means at hand for reconstructing in imagination the three different conditions of those northern lands during their inhabitation by three successive races. Taking the last first,—in Roman times the Danish isles were covered with a magnificent forest of *beech*, which still exists. This is the tree of the *iron age*. Its logs are abundant in the topmost layers of those peat-bogs which are so numerous in the north, and in which the skeletons of lost men, with large *long* skulls, are sometimes found, with iron arms and implements. Beneath these top layers lie others deeper down, but how much older we know not, the logs in which are all of *oak*. Oak was the forest of the age of *bronze*. In the peat-layers no iron is found, and very few skeletons; because the people of that age *burned* their dead, and buried their ashes in urns, beneath grave mounds. How many thousands of years this age of oak woods and funereal fires stretched backward we know not. But behind it lie the vaster ages of the stone period. The lowest layers of peat contain neither logs of beech nor logs of oak; their embedded trunks are chiefly of Scotch *fir*.

* Proc. R. Geog. Soc., Jan. 23, 1865. Kane and others have testified to the improvidence of the Esquimaux, and to their actually starving in midwinter when calm weather and the neap-tides permit the sea to freeze over, and the walrus have to seek water in the offing. In 1854-5 they were compelled to eat their dogs, but not a case of cannibalism is known to have occurred among them.—But see facts stated in Lecture X.

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The savages of those remote times lived in the true Cimmerian darkness of the pines; and their relics are the long heaps of oyster-shells, cockles, and other edible molluscs, plentifully mixed in with the remains of quadrupeds, birds, and fish, the catalogue of which I have already given you. Scattered throughout these heaps are found flint knives and instruments of bone and horn, coarse potsherds, charcoal and cinders, but not a trace of either iron or bronze. Yet the polish given to the stone knives and hatchets show that even this ancient age is not so infinitely remote from ours, either in time or in barbarism, as that of the people of the diluvium and earlier caves, to say nothing of possible relics in the tertiary deposits.*

See how all civilization is relative. As we look down these slopes of a foregone eternity, deeps yawn in deeps, in each a deeper still.

See also on what delicate threads of evidence such demonstrations hang. A single herring-bone in a hundred acres of oyster-shells,—a single file-scratch on a golden torque, found in a Druid barrow, tells the whole story. It is the master-trick of genuine science; Agassiz constructing the whole fish from a single scale; Leverrier detecting the skulking Neptune by a ripple in the orbit of Uranus. But, as I have said already, the method must be sound, the starting-point well known, or the result will be a lie. What I have given you this evening are the well-established and universally accepted results of many years of careful investigation, by all the archæologists of northern Europe, led by such masters as Worsæ, Nilsson, Steenstrup and Thompson, Wilson and Lubbock,† and Busk, and with all the resources of geology at their command. Hundreds

* The oyster is no longer to be found in the Baltic shores; and the periwinkle (*cardium edule*) which still grows there is a variety dwarfed by the brackishness of the Baltic water since the ocean was shut out from it, by the gradual rise of the Scandinavian peninsula, at the observed rate of two or three inches in a century. The absence from these kitchen heaps of the mammoth and rhinoceros is not so extraordinary as is that of the aurochs and reindeer, for the first two may have become extinct at an earlier period in this latitude.

† See Morlot's Mem. in Bull. Soc. Vaud, vi. 1860, Lausanne; translated in 8th contrib. Smith. Inst., Washington, and abstracted by Lyell in Ant. Man, p. 8.

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of peat-bogs have been searched, thousands of tumuli have been opened, miles of shell-heaps have been explored, and that beneath the jealous criticism of all Europe. In the sober judgment of well-informed men this much may be considered settled: that a general advance in civilization is perceptible in the past history of man during what may be roughly stated as the stone, the bronze, and the iron periods, or, if you prefer to call them so, the ages of the pine, the oak, and the beech woods; that the men of the stone age were savage hunters and fishermen, of small stature and low intellect; that the men of the bronze age came in from other lands, bringing with them the knowledge of metallurgy, a taste for beauty, and religious feelings which led them to burn their dead; and that the men of the iron age were of still another race and country, large of stature, long-headed, warriors, with iron swords, and iron ploughs, builders of forts and ships, restless invaders, fond of state, accumulators of property, oppressors of the ancient peoples, and the natural progenitors of the Berseckers and Jarl kings who, in the years of written history, conquered the west and south of Europe, and laid the basis broad for the eminent civilization of our modern times.*

Will any one be so far influenced by the prejudices of scholastic education as to insist on a reversal of this order of civil development? Will any one maintain that mankind, although at first created, in some Eden, a little lower than the angels, full of strength and beauty and endowed with supernatural intelligence, lords of the fowl and the brute, tilling the soil and adorning their homes with beautiful works of art, were nevertheless compelled by wrath divine against a mythical sin, to wander out towards the inhospitable north, fell into want and misery and lost their high prerogatives, abandoned their generous habits, forgot their faculties, grew savage, and became at last the wretched outcasts whose remains are mingled with the bones of extinct beasts and fishes of the sea on the Scandinavian shores? Let such a one remember that so far as our knowledge of history goes, so far as all the facts have been

* Nat. Hist. Review, 1861, &c. And two volumes published 1865, 'Prehistoric Times.' Williams and Norgate, Lond. 2 Vols. See 'Westminster Review,' July, p. 126.

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collected, no single instances of such a degradation can be cited in support of such a theory. Men, so far as we know, have always increased their stock of knowledge and power, instead of losing it. The law of invasion has been a law of development. Races have always elevated and ennobled each other. Their wanderings have been like the steps of a conflagration, the farther it goes the fiercer it burns. The Persian love of flowers becomes a national mania when transplanted to the icy banks of the Neva. The smelting of copper once discovered in Armenia, could no more be forgotten in Sweden and Norway, than the love of Christ can become extinct in California. A race may die out, but not its ideas; except by giving place to truer truths and lovelier lovelinesses. Civilizations, to be educated, may be forced to make the tour of the world; but they are not rolling stones that gather no moss. The mariner's needle of the distant east may have to wait a thousand years before it finds a box and dial-plate in Italy; but sooner or later it will be rectified for iron ships upon the Atlantic. It may be the year of our Lord 1862, before Blake and Pompelly shall teach the miners of Japan how to make a blast with their own gunpowder; but do you suppose those islanders will ever, to the end of time, allow that splendid trick to be again forgotten? Has not the whole movement of the human race been from the poles towards the equator? From ice and darkness and misery, towards the sunlight and the grape? Have we a single fact to show that the movement was ever in the other direction? Science cannot resign to a theological conjecture. Until incontrovertible facts are offered as an argument against it we must continue, in our reasonings, to follow the course of nature as we know it, and say that barbarism everywhere on earth preceded civilization; and accept the order of the Danish peat-bogs as the symbol of the order of the aboriginal development of the races of mankind.

'As has been truly observed,' says Mr Lubbock in a speech before the R. Geographical Society,* 'man, in the earlier times of which we have any relics, appears to have been not only a savage, but a savage living under Arctic

* Jan. 23, 1865, p. 61

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conditions.' Therefore the accounts which Kane, and Ross before him, have given us of the isolated race of Esquimaux, living on the west coast of Greenland, between the two great prongs of the Humboldt glacier, and so completely cut off from the rest of the world that they would not believe Ross when he said he had come to them from the south—are of surpassing interest to us. These Arctic Highlanders contend with nature for a chance to live under the extremest disabilities. They have no boats, and therefore cannot follow their food when it migrates. They have no fish-hooks, and therefore cannot live on fish. They have neither bow nor arrow, and therefore to them the herds of reindeer, which range unmolested on the barren uplands at the base of the great glaciers, the Sernik Soak, or great Ice-wall, as they call it, which hems them in, are valueless. 'They have never been seen to partake of a single herb, or grass, or berry grown upon the shore,' says Osborne,* 'and of vegetables and sereals they have of course no conception.' No other people on earth are known to be so entirely carnivorous. Kane calls them an expiring race; but he furnishes for the support of this assertion no good evidence. As Ross found them in 1818, Kane saw them in 1854; only, they had become friendly instead of being hostile to their visitors. Without driftwood, except a fragment of wreck at rare intervals, and with only a small supply of meteoric iron, and a few wrecked iron hoops, they could make no weapons but bone knives, bone harpoons, and bone lances, with which they attack and kill white bears and seals and walruses, with the help of dogs. With nets they catch in summer vast numbers of the delicious little auk or penguin. They have in use the identical form of skin-scraping tools which have been found so abundantly in the diluvial and cave deposits of Europe, flat on one side, convex on the other, round at one end, and pointed at the other. But as supplies of meat in such cold countries can be preserved for a long time, we may find in these carnivorous habits of the present Esquimaux a new and more satisfactory explanation of the vast numbers of animal skeletons which are found in the old caves, if we suppose the ancient inhabitants of Europe to have been an Arctic and carnivorous

* Jan. 23, 1865, p. 50.

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race.* In spite of all the disadvantages of their situation, 'all who have seen these people describe the men as square built, hearty fellows, deep-chested, bass-voiced, and merry-hearted; and the women, good souls, as tender and sympathetic in their quaint way; for it's not every European mother who would lend a nice warm babe to make a soft pillow for a weary traveller, as the ladies of Etah did; and fair enough to win the hearts of some on board of the *Advance*. Kane's faithful hunter Hans abandoned him for love of Shanghu's pretty daughter, who had nursed him when wounded in a walrus hunt. These people live as far north as 80°, and there are indications that Esquimaux settlements may even be found at the very pole.†

In strong contrast with the well-authenticated, well-compacted, and in all respects sober mass of information which the northern antiquarians have put at our disposal, stand the isolated and ill-confirmed reports of tertiary men, such as those of the Abbé Bourgeois and M. Desnoyers; and also the extraordinary theories of enthusiasts like MM. Brouillet and Meillet, based upon—mistakes. But when we remember the wild conjectures to which Phœnician letters on the Grave-mound amulet in western Virginia gave rise, and the numerous forgeries of Oriental human relics in our Western States, which have been reported from time to time, it is not unuseful to observe how such aberrations may be possible even to the most advanced science of Europe. These gentlemen have lately published an account of certain bone-caves in Poitou,‡ from which they have obtained animal remains, similar to those found in

* Kane and others found that the Esquimaux kill the walrus rapidly in the spring, and heap their bodies on the shore, piling rocks over the heap, while they kill more; but like all savages, they are so thoughtless that these *cáches* putrify in the summer; for they never seem to think of making them in the ice-caves of the adjacent glaciers. All this proves how tenacious human life is. Kane says that the Arctic winter temperature stood for three months at—60° to 75° Fahrenheit. But human life is tenacious of the earth only where animal life is so; the enormous walrus suckles its young in midwinter at 77° lat.; so do the herds of seals feeding on fish. But the walrus seems to feed on sea-weed alone. At any rate the glacial period in Europe could no more extirpate the cave-dwelling race than the Arctic winters can the Esquimaux. (Proc. R. Geog. Soc., p. 65, Jan. 23, 1865.)

† Reiterated by Mr C. R. Markham, Proc. Geog. Soc., Jan. 23, 1865.

‡ See Westminster Review, July, 1865, p. 121.

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other caverns in France, scratched and marked by man. On some of them are Sanscrit letters, not so arranged, however, as to be pronounceable in words or syllables; and two of them are scratched upon a bone representing a phallus. From these assumed Sanscrit letters they conclude that the cave-people of France were emigrants from Asia; that the written language of Arya was of enormous antiquity; that the probable date of the relics is 24,000 years B.C.; that at that time there occurred one of those periodical cataclysms which desolate the earth and drive the races to and fro; that another, taking place about 14,000 B.C., was the *débâcle* produced by the breaking up of the antarctic polar ice; and that a third was brought about in 2350 B.C. by a similar breaking up of the ice-cope around the Arctic pole.

Unfortunately for this fine theory, M. Pictet, of Geneva, pronounces that these letters, although actually Sanscrit, have been unskilfully selected from one of the more modern forms of that alphabet! Setting aside, however, the stupidity of the forgery, the hypothesis, judged upon its own merits, *mêlange* as it is of scientific and unscientific elements, can hardly hold together long enough for us to look at it. We might almost as well accept the Greek or Hebrew fables of a universal deluge; a phenomenon which we well know to be physically impossible; for the most tremendous rain-fall does not exceed six inches per hour, and so completely desiccates the atmosphere, that it can last but a short time; whereas, even if it continued in full force for forty days and nights, the entire amount would only be some 6000 inches, or 500 feet. If all the aqueous vapour in the atmosphere were to be condensed at once, it could not elevate the sea level by 50 feet. Nor is modern science aware of the existence of any 'fountains of the great deep' to be broken up, to supplement the deficiency. And if, as some have been willing to suppose, the divine hand could have pressed down some one area of the crust of the earth, so as to permit the ocean to rush in and cover it, the only consequence of that would have been to drain off extensive areas elsewhere, and thus increase the amount of land left dry.

When we introduce the idea of cataclysms, therefore, into ethnology, we must carefully limit their magnitude,

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and define their causes, wholly irrespective of the fanciful or allegorical stories of the ancient poets; remembering, moreover, how the ignorance of men predisposes them to enlarge and dignify their personal and local misadventures into universal disasters to the human race.

Too great a cataclysm would extirpate nations, instead of transferring them from one domain to another. We must lessen the cause if we wish to produce the required effect. Had the melting of the Swiss glaciers been the sudden result of the instantaneous emergence of the Sahara desert and the immediate creation of the Sirocco winds, the aboriginal population of Europe would have been swept by a double deluge into the surrounding seas. But, as we know, the African portion of the ancient Mediterranean was cut off from the European portion of it so slowly, by the gradual accumulation of gravel bars between the Carthaginian and Cyrenian coasts; and the drying up of the African waters must have been a process so deliberate, and so apart from any noticeable change of level as to land and sea, that the melting of the glaciers may have occupied the lifetime of a generation of cave-dwellers, and produced no change of climate, nor of soil, to which they were not amply competent to adapt themselves.

Truth needs a good perspective. A hill looks always steeper from its foot, or from its summit, than when we are upon its sides. So the foreshortening of time, regarded with a backward glance, piles up the thousand minor incidents of some slow change into one mighty crisis, and we stand amazed and terrified at the possibility of the recurrence in our day, of what, were it really to happen, would no more trouble us than any of the ordinary common-place experiences of life.

It is not a general deluge then, it is an ordinary inundation, which mankind has to fear. A freshet, as we call it, a famine, a pestilence, a murrain in their flocks and herds, the loss of timber by the conflagrations of a year of drought—these are real cataclysms of human history; producing poverty and desperation, exciting insurrections against established governments, bursting into a blaze of civil war, and ending with the expulsion of the unfortunate to seek and settle upon other lands. When once the impulse is established in some distant and perhaps unheard-

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of portion of the population of the world, it propagates itself from tribe to tribe and from race to race, those behind precipitating themselves upon those in front, and those attacking having the usual advantage over those attacked, until a whole continent is ethnologically shifted forward one degree, while some pre-eminently vigorous stock may have even penetrated through half of the moving mass and planted itself in the very heart of an entirely alien race. Such was the case of the hyperborean Hungarians, now surrounded by Sclavonians; and such was every way the case with the establishment of the Vandals in northern Africa, of the Saracens in Spain and southern France, of the Turkomans in Greece, and of the Hyksos in ancient Egypt, who probably crossed, like the Turks of modern days, the whole of central Asia, from the northern borders of the Chinese empire.

We are too apt to regard political revolutions as the work of politicians. Far from it. Websters and Calhouns are merely maggots in the fermenting cheese, bred of it, and feeding on it, but not much more than illustrations of its liveliness. We must find the causes of political revolutions in the masses of the people. Fat folks love ease and hate the clash of arms. The wolves of the Pyrenees descend into the villages not until they are gaunt-ribbed and hollow-eyed with famine. Throw multitudes out of employment,—it is like dipping a handful of cotton-wool into sulphuric acid; you turn it into gun-cotton, and any spark will explode it, so as to tear your hand in pieces. Thus are governments destroyed.

Look at any good chart of the region of China around the capital city of Pekin. You will notice there the course of the mightiest river in the world, the Yellow River, Hoang-ho, which drains the central parts of Asia. You will notice also a range of mountains (running north and south directly in its path to the gulf of Pechele), which one of our geologists, Mr Pompelly, believes to have been elevated at a recent date. Through this range the river once passed directly to the sea by what is now the bed of another river, the Pei-ho. But by a subsequent re-elevation of this mountain-chain the great river, turned at a right angle southward, has been compelled to seek, along the western foot of the ridge, its passage 350 miles farther south

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than the gap through which it used to go before. Here it turns east, goes through, and takes its unobstructed way to the Yellow Sea. The country between the mountains and the sea is a low plain traversed by numerous ancient river-beds, a vast delta which the river has been slowly and steadily reclaiming from the ocean for no one knows how long. In old Chinese municipal records many of the ancient cities which now stand miles and even leagues back from the shore, are described as seaports, with good harbours, when they were first built. You will also notice a high mountainous promontory projecting from the middle of the delta into the sea; this was an island once. The delta has been formed around its western end by the Yellow River, changing its bed alternately to the right and to the left, with a motion precisely like that of the head of a silkworm when spinning its cocoon. At the last meeting of the National Academy at Northampton, Mr Pompelly exhibited a chart of this delta, constructed for him by a learned Chinese scholar, whom he employed to search the historical records of the province, so that he could lay down the different courses which the mighty stream had taken under the different dynasties of Chinese emperors, debouching alternately on the two sides of the central promontory. There is a Chinese story, that after a deluge, which destroyed mankind, the great king, Yû, first emperor of the first dynasty, B.C. 2100, built dykes to confine the river to its then existing bed. This care of the Yellow River became the hereditary policy of all succeeding emperors, a *sine quâ non* for any dynasty, however powerful. For, as the river filled up its bed, until its surface level stood 50 and 60, and, as the Jesuits say, even 90 feet above the surrounding country, the least remissness threatened incredible calamities. The delta was exceedingly fertile; its population was the densest in the world; its level surface could afford no shelter from destruction were the banks to break; flight might save individuals, but in a state of utter destitution, for the highlands were a hundred miles away; the flocks and herds would surely perish; and the river, swollen for the occasion, would plough a broad, deep avenue of annihilation through the sites of towns and cities, to its new mouth upon the farther side of the peninsula. In the face of all these terrors, and they

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were no imaginations, for they had been repeatedly realized, the government officials would periodically grow careless and venal; the misappropriation to themselves of taxes, levied to keep up the banks, allowed those banks to become slowly weaker at every point, until some winter of uncommon snow upon the mountains would be followed by a late spring of uncommon heat; the river would suddenly overtop its insufficient banks and spread destruction over the whole delta. The destruction of life alone, to this over-populated region, although appalling, would be rather a blessing than a curse. English ships have been known to steam up all the way from Whampoa to Canton through a sheet of dead bodies like drift ice, after such an inundation of the Canton river. But the worst terrors of the event lay in the millions of unburied, putrifying corpses, covering the fields; the starving myriads, women and children; and the desperate ferocity of armed brigands, wifeless, and childless, and houseless, and landless, and moneyless, moving from the scene of wrath and woe outward in all directions, to spread disturbance through surrounding provinces. To suppress these armies of vagabonds armies of regulars and volunteers had to be employed, which only increased the evils of the land. Continual fighting turned the robbers into warriors, and the imbecility of the decaying dynasty which had been the original cause of failure in the river-dykes, became now the cause of its military overthrow. The records of China show that these changes in the course of the Yellow River, happening at regular intervals of three or four centuries, have corresponded with as many imperial revolutions. We need not doubt that some of these revolutions, commencing at the Yellow Sea, have set in motion waves of war and wandering, which never stopped until they broke upon the Atlantic coast.

But we are not to think that a millionth part of the water follows the wave. The form advances, but the equilibrium must be maintained. Persons, families, armies migrate; but not the race. Were this not true we should see to-day the cat-eyed Mongol tethering his horse on the lands of western France. Hang up a row of ivory balls; strike the first one; what happens? Do they all rush forward in a heap? No, the last one only flies; the rest

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remain in place. Thus the races of mankind have, in the main, retained their original seats by virtue of an elasticity inherent in all organized society, even of the lowest grade; yet propagating tidal waves of agriculture, commerce, mechanics, arts, politics, and religion from east to west, fusing the different races practically into one.

There are other, less striking, but more powerful, physical causes of the out-wanderings of races; such as the change of fertile countries into deserts, or of salubrious into pestilential air. But the physical sciences have not yet made these causes indisputably clear, and history has not preserved sufficiently plain records to enable us to judge of the events. Two instances of such, however, may be cited as well worthy of consideration.

There is a range of desert country stretching across the map of the old world, from the Atlantic shores of northern Africa, by Egypt and Arabia, Persia and Independent Tartary, to the Chinese Wall. Its drought, and consequent sterility, connect themselves with certain grand and constant currents of the atmosphere; as also do those similar but more restricted deserts lying on each side of the Andes and the Rocky Mountains in America.

But the removal of forests also has much to do with the production of desert lands; for the forests modify the rain-fall. The Kalahari desert, in southern Africa, is gaining in extent, its rivers drying up, as Mr James F. Wilson says, because of the indiscriminate felling of timber by the natives and colonists combined; the land once occupied by the frugal, thrifty Hottentots is now possessed by wasteful Caffres; and iron axes are in everybody's hand, where formerly an iron axe was a great rarity. Thus even an improvement of the highest value in the arts may give occasion for a fatal wrong to a portion of mankind.

Mr Cyril Graham has shown that the anciently populous region of Hauran, to the east of Damascus, full of the ruins of great cities, became the uninhabitable desert it now is from the same cause. Generals Humphreys and Abbot, of the United States army, have demonstrated, in the case of the Mississippi, what Sir Roderick Murchison asserts of the Volga, that its volume of water has diminished by the settling and clearing of the upper country. The French revolution let loose the axe in the Pyrenees, and

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the people were fast turning the south of France into a desert, when Napoleon restored the ancient law to protect the woods. Colonel Balfour has shown how the replanting of trees in India has re-opened its lost springs. Lord Stratford de Redcliffe tells us that after speculators had obtained permission to cut the forest of Belgrade, the contract had to be annulled; for the reservoirs at Constantinople, in consequence, began to fail.* How much of the spread of the Arian race was due to the formation of the Persian deserts, and that of the Hebrew race to the new sterility of Syria and Palestine, are curious questions for the cultivators of almost every branch of physical science to take some part in settling satisfactorily.

There is still another class of causes affecting the migration of races, to illustrate the nature of which it is only needful to refer to the alleged destruction of the Indians of the United States by a universal pestilence, previous to the appearance of the English colonists at Plymouth Rock; and to that less apocryphal destruction of the same ill-fated race subsequently by syphilis, and smallpox, and scarlet fever, and fire-water, imported among the tribes from the homesteads of the whites.

But as nature never repeats herself, so every migration that has ever taken place in history, or before history, had features of its own; varying, as it did, from all others in its force and velocity, in its brilliancy, in its scope and outspread, in its influence for good or evil, and therefore in its consequences at the present day.

From the background of written history, two great migrations stand out pre-eminent—one which affected the religious development of the human mind; and one, in-

* Proc. R. Geog. Soc., p. 106. May, 1865. Dr Livingstone, however, has refused his assent to this explanation. He vouches, indeed, for the facts, and gives instances of the drought of springs in his own garden, and names old water-beds, now dry, still called 'rivers' by the natives; but he ascribed the phenomenon to the rise of the western edge of the continent to a higher level above the sea, and to the production of fissures, like that of the Victoria Falls, draining interior lakes, changing their levels, and making humid winds dry. Dr Kirk objects that wood in Central Africa is abundant on the Zambesi, and that there is an average amount of population, but insufficient to extirpate the forest, only using wood for fuel. He is, therefore, inclined to ascribe the dryness of Southern as well as Northern Africa to atmospheric currents.

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augurating the new era of universal liberty and Christian philanthropy :—the migration of the Abrahamic race into Palestine, two thousand years before the advent of Christ; and the emigration of Anglo-Saxon colonists to the New World and to Australia. Of the latter, it is not here the place to speak; but the other is more closely connected with our subject, as it relates directly to the earliest civilization of the globe. I do not myself believe with entire confidence in the personal existence of the Jewish patriarchs. For you will find in the old Hindoo mythologies the names of Abram, Isaac, and Judah, ranged in a similar order and connection. Brahma's son, Ikswaka, was the great-grandfather of Yadu.* The Hebrews of Palestine were but a single twig of that wide-spreading branch of the Shemitic tree which had its original seats in central Asia, and migrating southward and westward over Persia, Mesopotamia, Arabia, and Syria, entered Egypt under the name of Hyksos. We read in Genesis that Abram came from Ur of the Chaldees, which all the Fathers have considered to be Edessa or Orfa, in the western division of northern Mesopotamia, nine miles from the Euphrates,† but which the excavations of the British consul, Mr Taylor, have shown to be in the south, near the junction of the Tigris and Euphrates.‡

We are also told in the book of Numbers (xiii. 22) that Hebron, the city of the Hebrews, and the head-quarters of the Abrahamites, was built by them seven years before Zoan, or Tanis, in Egypt, where are now to be seen the masterpieces of Hyksos architecture.

You remember that Isaac had a legendary brother Esau, the father of the Arabian nomades.

We must not judge this people by the Jew sutlers in the army of the Potomac; nor by the three-crowned hat-pedlers, crying 'O'Clo'!' along the slums and stews of

* Icswaca, Surya (the sun), Soma or Chandra (the moon), Yadu (Judah), Chahuman, Pramara, &c. Ant. Radjpoot MSS. A Sanscrit edition gives Icshwaca, Soma, Yadu, Pramara, &c. MSS. Index, H. 20.

† Callirrhoë in Pliny, v. 21; Antiochia; Justinopolis; and supposed to be the ARK (ereck) אֶרֶךְ of Gen. x. 10. Two days' journey S.E. of it is Charræ (Harran), the HRN (Harran) חָרָן of Gen. xi. 31, xii. 5, xxvii. 43, xxviii. 10, xxix. 4; 2 Kings xix. 12; Isaiah xxxvii. 12, and Ezekiel xxvii. 23. Here Crassus was defeated.

‡ Proc. Geog. Soc. 1865, Jan. 9, p. 39.

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London. We must seek it in its native place, where it is a king. Not crouched against the walls of the mosque of Omar at Jerusalem, but on horseback in the desert, swinging the scimitar or hurling the lance of the Saracen; or in the professor's chair at Cordova, translating, expounding, and enlarging all the philosophies of foregoing ages. We must regard those fine processions of tall, grave, long-robed merchants, entering the villages of Liberia and Sierra Leone; each man a judge of righteousness, incapable of levity or meanness, noble in speech and conduct, and propagating the faith of Islam to-day with the same zeal with which their fathers fought for it a thousand years ago. Study the Arabs in the Indian Ocean, on the islands of Java and Sumatra, surrounded by other races—Malays, Hindoos, Negroes, and Chinese,—and you will not only acknowledge their superior blood, but remark their consciousness of this superiority. To this Arab or typical Hebrew Shemite the old prophecy gives the tent; and the Hamite and the Japhetite are to come into it to serve him. Arabs are the commercial masters of the tropics. Hebrews rule the politics of every government in Christendom by slips of paper from their counting-rooms. They have stamped their religious conceptions upon the written history of half the globe. They have afforded to the world its noblest thinkers, its grandest poets, its most fiery orators, its sweetest musicians, its largest-minded merchants, and its most absolute martyrs to patriotism and conscience. Whence came, then, this grand race, and where did it make its first appearance in history?

The recent discoveries of M. Mariette, perhaps the ablest and most successful of all explorers in the valley of the Nile, have conferred upon ethnology two inestimable boons. First, he has opened up a world of monuments relating to a part of Egyptian history about which we knew nothing, and the most interesting part of all—the earliest. And secondly, he has dispelled the last shades of doubt which hung about the authenticity of Manetho's lists of kings. His discovery of the monuments of the early Memphite dynasties will become important to us hereafter, when we discuss the architectural ideas of the earliest men.

But the second point is of importance here. For M.

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Mariette, by placing it beyond dispute that the list of Egyptian dynasties and kings which Manetho gives us, is not only genuine, but constructed in the ordinary manner in which all governmental or official lists are constituted, viz. by taking only the legitimate sovereigns of the whole realm, and each one only for that time during which he reigned the acknowledged legal monarch,—has put an end to all attempts to shorten the Egyptian chronology upon the supposition that many of Manetho's kings and even dynasties were contemporaneous,—attempts made of course solely in the interest of the Rabbinical age of the world. The 6th dynasty, for instance, it was long supposed reigned at Elephantine in southern Egypt, while the 7th was reigning with independent powers at Memphis in the north. But M. Mariette has disinterred monuments of both those dynasties on the sites of both their capitals, viz. at Elephantine in Upper Egypt, and at Sakkara near Memphis at the head of the Delta. Each dynasty therefore must have ruled over the whole kingdom; and consequently the two dynasties could not have been contemporaneous.

In like manner the 13th dynasty, which had its seat at Thebes, must have preceded the 14th dynasty, which had its seat at Xoïs, because from the colossal statues of its kings discovered at Sân near Xoïs, it must have reigned there also.

For 1700 years before Christ, that is, from the end of the 17th dynasty, that of the Hyksos, onwards, the history of Egypt is well known; and in all this length of record Manetho has been found correct; he has not doubled any reign by inserting a contemporaneous ruler before or after it. We have no right, therefore, to suspect him of having committed this blunder in the earlier portion of his list. But such a blunder could only be intentional; and he could have had no prejudice to serve by such a wilful sacrifice of truth, in favour of a *long* chronology. His reputation is but just recovering from the load of obloquy which the Jews, and their disciples the Protestant chronologists, have heaped upon it, for no better reason than that they think they must make the history of all nations upon earth draw up its knees to lie within the child's cradle of the Hebrew scriptures. Father Jerome tells us how the

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Rabbis of Tiberias doctored these Hebrew scriptures, by slipping back the birth of the firstborn of each of the antediluvian patriarchs one hundred years upon his father's life, in order to bring the birth of Christ at the year 4000 of the world's creation, instead of at the year 6000. He tells us that their motive was to take the millennium argument out of the Christians' mouths. For the early Christians claimed against the Jews that Jesus must be the Messiah, because he had come according to prophecy current among the Jews themselves, at the dawn of the great Sabbath, the seven thousandth year. When we reject Manetho's list, we do it in behalf of the Jews, who chuckle at our simplicity; and we do it also in the face of the old Greek version of the Hebrew scriptures, the chronology of which is 2000 years longer than that of King James' translation, showing us how the trick of the Jews was played.

One of the most satisfactory evidences we have that Manetho did not double either his dynasties or his reigns, is the fact that the hieroglyphic lists of kings, especially the new list lately discovered at Abydos, contain a multitude of kings' names which do not appear on Manetho's list at all.* During the rule of those fierce strangers, the Hyksos, there were several native dynasties maintaining a precarious existence in various sections of the valley of the Nile; but the great historian, true to his principle, that kings *de facto* were the only kings *de jure*, refuses to insert in his list the names of these little native pretenders; he engrosses only the names of the Hyksos monarchs, although foreigners and tyrants in his list of the 17th dynasty, because they really reigned.†

A learned lady of England has exerted herself to prove

* Consult not only Manetho, but Eratosthenes, and the tablets of Abydos, of Thebes, and of Sakkara, and the papyrus of Turin. The grand temple at Abydos, just discovered by Mariette, presents a new list, analogous to those we have already had, but admirably preserved. It is of the time of Sethos I., 1200 B.C. Sethos has selected 77 names of predecessors to make up his list, which ends like those of Manetho, and the Turin papyrus with Menes and Atothis. Touthmes III. (1500 B.C.) makes offerings to 61 predecessors, on the tablet in the Imperial Library at Paris (Renan).

† Renan, Révue des Deux Mondes, April, 1865, p. 664. Mariette's Aperçu.

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that these mysterious intruders into Egyptian history, the Hyksos, were the same people who are called in the early Hebrew writings the Susim (Hak-Sus, meaning 'king of the Susim'), a mighty nation first heard of as inhabiting the Hauran country, south of Damascus, and east of the Upper Jordan. Whether this be true or not, the first appearance of these nomades seems to be described upon the walls of the tombs of Beni Hassan, built under the 12th dynasty, nearly 3000 years B.C. There the traveller beholds, for the first time, the pictures of processions of patriarchs with great eyes and aquiline noses,* coming with their wives and little ones, their poor utensils, and instruments of music, to request the governor of Egypt to give them lands to dwell in, to escape a famine in their own. It is the story of Abraham, Jacob, and Joseph, told by Egyptians; the first pacific modest appearance of that terrible race which was to throw all Asia afterwards into disorder, take possession of the land that succoured it, and finally give the human race the grandest, the holiest, and the most enduring part of its history.

The distinguished Egyptologist, Dr Brugsch, and an advocate for the authenticity of the Mosaic account of the Exodus, states the accordance of the monuments with that account in a much better and more conclusive manner than Hengstenberg has done, and introduces into its scenery fresher tints. One chapter of his charming little book, *Aus dem Orient*, is entitled 'Moses and the Monuments,' and in this chapter he resumes all that the hieroglyphics are as yet known to teach about the Hebrews. Tanis, the Hyksos capital, called hieroglyphically HAUAR, Avaris, was besieged and taken by the first king of the 18th dynasty. Its Pharaohs effected the conquest of Asia, planting their furthest triumphal obelisks on the borders of Armenia, and returned with armies of captives to build innumerable monuments along both banks of the Nile. Pictures remain

* But the Hyksos are described as red haired and blue eyed, which gives origin to the theory that they were the earliest appearance of the Gothic or Scandinavian race of the Iron age. Renan remarks that the Hyksos monuments are at Sân, Tanis, or Zoan, צֹעַן מִצְרַיִם, which was founded seven years after Hebron, according to Numbers xiii. 22. Hebron was held by אֲחִימָן (AHIMN) שֵׁשַׁי (SSI) and תַּלְמַי (ΘLMI) the sons (ילידי) of Anak (הענק). Here again we have Susim.

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to us of these captives drawing water, treading clay, spreading out and piling up their tales of bricks to build a temple with, under the supervision of Egyptian figures armed with rods. The 19th dynasty had for its first three kings, Ramses I., Seti I., and Ramses II., the great Sesostris, who reigned 66 years, and pushed his conquests north, east, south, and west. To guard his frontier against the Hittites of Palestine, he forced his native Hyksos serfs and foreign military slaves to build a chain of forts across the isthmus of Suez, of which the principal were Ramses and Pithom (Pachtum, Pelusium), names mentioned in Exodus i., ii., as built by Hebrews, under the tyrannical oppression of a Pharaoh (Theban PER-AA, Memphite PHER-AO, means high house, or sublime porte), who knew not Joseph. One of the papyri of the British Museum, of the date of Ramses II. (1250—1300 B.C., Anastasi, iii. p. 1) is a description, by a scribe named Pinebsa to his master Amenemaput, of the aspect of things in and around the new city Ramses,—of the entrance into it of the great Pharaoh,—and of the petitions for relief against their overseers, which they thronged about him to present. Another papyrus reads: 'Sum of buildings 12, by people brought from their residences to make brick in the city; they made their tale of bricks daily, without stopping, until finished. Thus the task given me by my master has been accomplished.' These conscripts were not Egyptians; they were called APURU, Hebrews. They are often mentioned, on the stones and in papyri, as at work, guarded by Mazai, the Libyan gendarmerie of Egypt. In a papyrus of the Leyden Museum, an employé of Ramses II., Kauitzir, reports to his upper scribe Bakenptah: 'May my lord be pleased with my execution of his assigned work, as follows: distribution of food to the soldiers, and to the Hebrews dragging stones for the great city Ramses Meiamoun the truth-loving, under the oversight of police chief Amenaman. I gave them food monthly, according to my master's excellent arrangement.' A second papyrus in the same museum is written by one Keniaman to his superior, the Katena or general Hui: 'I have fulfilled my lord's orders to give food to the soldiers as well as to the Hebrews who drag stones, &c.' In the rock valley Hamamât, along which the great commercial route of Egypt from Coptos

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on the Nile to Berenice on the Red Sea, is an inscription describing the quarry work done by 9000 men, among whom was a squad of 800 Hebrews under escort of Mazai police, who had brought the poor devils probably all the way from Goshen in the Delta.

Now if the Hebrews' story of their own wrongs and of their deliverance is to be believed, we must suppose Joseph to have come down into Egypt under one of the Hyksos kings of the 17th dynasty, a Shemite like himself. When the native Pharaohs suppressed the Hyksos government, they oppressed the Hyksos colonists, who remained, forming perhaps nearly the whole population of the eastern wing of the Delta. Moses was born, say in the sixth year of Ramses II., 300 years after Joseph's day. In his tenth year Ramses entered his new city, built with Hebrew hands. Add to the remaining 60 years of his reign the 20 years which his son Menephtha reigned, and we get the 80 years of age which Moses had when he led his people forth.

Ramses II., like Cæsar and Napoleon afterwards, was always in trouble, sitting on a throne planted over mines which any moment might explode. He made an 'extradition treaty' with Chetasar, king of the Hittites, who bound himself to return to Egypt all fugitive Hebrews found in Palestine; and the same fearful policy might have actually gone the length of an edict of universal male Hebrew child-murder, in view of the eventuality which the Hebrew Scripture thus expresses: 'for when a war arises, they may join our enemies and fight against us, and escape out of the land.' Ramses and his successor added to this fierce oppression a religious seduction; they instituted an ostentatious worship of the sun-god Baal of the Shemite race. Ramses presented his own colossus (now in the Berlin Museum) to the temple of the sun in Zoan, where, says the poet of Psalms lxxviii. 12, 43, Jehovah (by Moses) 'showed his wonders.' Menephtha built no temples, but inscribed his own name on his fathers' monuments with the title 'Worshipper of Sutech-Baal of Tanis,' and cut the image of Baal on the back of one of his own colossi with the figure of his son worshipping before it.

The name Moses is now identified with the Egyptian MAS or MASSU, meaning 'the child,' a name borne by many

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personages of that age, one of whom is entitled on a monument of the reign of Menephtha, 'Viceroy of Ethiopia;' and this inscription probably gave rise to the assertion of Josephus, that Moses, when a young man, led an Egyptian army into Ethiopia to besiege Meroë, and married the princess Tharbe out of gratitude for her assistance in entering that city. The Hebrew story makes him the adopted son of Ramses' daughter, and says that he was learned in all the customs of the Egyptians, as in fact might be inferred from the Hebrew ceremonial which bears his name, and the restricted monotheism which idealizes all the writings going by his name; for in the roll of the dead deposited in Egyptian graves, God is not named, but only designated as the NUK PU NUK, 'I Am what I Am,' precisely the title 'Jehovah' of the Pentateuch.

At this point, however, all alliance between the monuments and the Mosaic story ceases. Several centuries elapse before the Sheshonk of the 22nd dynasty appears in Hebrew history as the Shishak who besieged Jerusalem. Of the Exodus, of the wanderings in the wilderness, of the settlement in Palestine, the monuments say not one word. Coming directly from the land of hieroglyphic writing upon stone, and learned in the art,—leading a people who had not only had memorial sculpture before their eyes all their lifetime, but had themselves built up the walls and set the statues, steles, and obelisks, which bore descriptions of every public event, is it not an incredible supposition that Moses should have wrought such wonders, traversed such a length of route, encamped beneath the granite cliffs of the peninsula, and in the defiles of Mount Hor so many years, without leaving a trace of his existence, a line of writing, a letter, a scratch to authenticate his story, not even the two tablets on which he is said to have inscribed his decalogue! There are thousands of rude figures in the valley Mokatteb, and in other ravines descending from Mount Serbal, and they have been studied carefully by a multitude of scholars, under the strongest temptation to make them out Mosaic, but it has not been done. No Egyptologist can speak with patience of Mr Forster's book.

Our faith is always in degrees. We believe in Alfred more than in Arthur,—more in the Gracchi than in

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Romulus and Remus. *Time* and *distance* have great dominion over historic faith. Alexander is to us a real personage; we believe in Socrates not quite so clearly, but yet more confidently than in Lycurgus; in Lycurgus more than in Cadmus; in Cadmus more than in Hercules; and not at all in Jupiter and Semele. But time is but a single element in the constitution of the credence that we give to past events, and not at all the most important one; otherwise Ramses II. would not be to the mind of scholars of the present day as solid a reality as Cæsar or Napoleon.

Time goes for nothing when we have *contemporary documents*. These are the legitimate masters of our faith. In their absence there must always be more or less of anarchy in history, more or less doubt mixed with our faith. Ramses as Sesostris, that is, before his monuments were discovered, was the fanciful hero of a Greek fable,—quite on a par with Hercules. The traveller who deciphers Bonivard's signature on the stone column to which he was chained in the Chateau of Chillon,—or the half-finished couplet of Byron at the top of the Giralda of Seville,—who stands alone in the desert of Murgab, before the marble fragment which bears the winged relief of the old Persian king, and reads the words: 'I am Cyrus the king, the Achæmenian,'—or who catches a glimpse of some noble record in the valley of the Nile, such as that of the ancient governor of Lycopolis: 'Never have I taken the child from the mother's breast, nor the poor man from the side of his wife,'—*he* feels the full meaning of the term *contemporary testimony by means of monuments*.

But there is a third element of history which regulates the other two, and by which we criticise and limit the value of contemporary monuments,—it is the *vraisemblable*. A tale told by the mountain (TEL) itself cannot be believed unless it represents events as flowing in that self-same current of the *commonplace* in which our lives flow on. The essential sameness of the manners and customs of mankind—the long-enduring unchangeableness of the social life of man—the steadfastness of man's relationships to nature—must not be violated, or we cannot believe. Even when Sesostris was a myth like Hercules, there was this difference: the story of Sesostris was extraordinary, but probable were there but records left; but that of Hercules

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would be incredible however many monuments were left.

Now, judging the Mosaic story by these canons, in which all agree, we find it of an age far antedating all precise history,—we find it utterly unsupported by contemporary monumental records,—and we feel it to be a splendid series of incredibilities from first to last. His birth, his miracles, his exodus, his converse with Jehovah, and his mysterious disappearance,—all stamp the history with an indelible character of myth, which not a single discovery of any branch of science has yet repaid the endeavour to efface.

In less degree—in a far less degree—but still in essentially the same mode, the legends of the Jews of a date previous to the reign of Solomon are utterly unhistorical, although the stories of the Judges are probable enough. Nothing prevents us from identifying the Hebrews of the monarchy as descendants of the Hyksos race, nor from supposing that the Mosaic records were inventions of a later age, based on a mixture of Hyksos traditions, Arabian poetry, Zoroastrian mythology, and genuine Egyptian and Assyrian monumental history. Nothing prevents us from concluding that the Egyptian inscriptions record merely a local and temporary eddy through the isthmus of Suez, of that master flood of migration, which, starting from the centres of Arianism, about the Hindu Koosh, in Afghanistan, and allying itself originally with the movements of the Children of the Sun and the Children of the Moon in north-western India, spread itself over Palestine, and Syria, and Arabia, and then, through the dispersion of the Jews, into all the countries of the modern world; a migration which, as I have said, is the most important of all that have occurred since man was placed by his Creator on the earth.

But in an anthropological sense the history of the Hebrews is of far inferior importance when compared with that of the early Egyptians, for of this last we have a world of contemporary documents, and therefore the most precise information. It is to the earliest monuments of Egypt that we must turn for pictures of the social state of a race of men, standing in the boldest contrast with all that we know, by inference from the relics of the diluvium and the cave deposits and the palafittes, of the social state of far more ancient and more savage races, living under less

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CHART OF EGYPTIAN HISTORY.

ANCIENT EMPIRE: lasted 1940 years (? Manetho.)

Thinis Dynasty	I. Menes.	Pyramid of Cochomé.
Thinis	II.	Monuments rare. 769 years.
Memphis	III.	
Memphis	IV. Cheops.	Pyramids. Mt Sinai (Wady Magara).
Memphis	V.	Tombs at Saqqara.
Elephantine	VI. Nitocris;	Apappus.
Memphis	VII.	Monuments wanting. 436 years.
Memphis	VIII.	Egypt perhaps overrun by foreigners.
Heliopolis	IX.	The end of the old writing, religion,
Heliopolis	X.	civil service, &c.

MIDDLE EMPIRE: lasted 1361 years (? Manetho).

Thebes	XI. Entef, Mentouhotep.	Obelisks oldest known.
Thebes	XII. Osortasen, Amenemha.	Beni Hassan. Lake Mœris.
Thebes	XIII. Nofrehotep, Sebekhotep.	60 kings, 463 years.
Xosi	XIV.	Nothing known of this. At its close commenced
Entef	XV.	invasions of the Hyksos, lasting 400 years;
Entef	XVI.	ended with the establishment of the Hyksos.
Sân	XVII. Saïtes (HYKSOS).	Colossi. Sphinxes.

CLASSIC EMPIRE.

Thebes	XVIII.	Amosis (Ahmes). Amenophis. Thoutmes. Queer Hatasou. Thebes illustrated. Asia conquered Sun worship introduced by Khou-en-aten.
Thebes	XIX.	Ramses I. Seti. Sesostris (Pentaour). Menephtha.
Thebes	XX.	Ramses III. (Sea fight.) Asiatic influences.
Thebes; Sân.	XXI.	Priest dynasty at Thebes. Manetho's kings at Sân.
Tell-basta	XXII.	Sheshonk (takes Jerusalem). Egypt a part of Asia.
Sân	XXIII.	Twelve barons divide Lower Egypt. Upper Egypt becomes a province of Soudan.
Saïs	XXIV.	Bocchoris, reigning six years, the only king.
	XXV.	Sabacon (Cush) conquers Egypt. 50 years. Tahraka.
Saïs	XXVI.	Psammiticus, the Libyan? Greek mercenaries. Periplus of Africa. Canal of Suez reattempted.

PERSIAN, GREEK, AND ROMAN EMPIRES.

	XXVII.	Cambyses. Darius. 121 years.
Saïs	XXVIII.	Wars with the Persians.
Mendes	XXIX.	Wars with the Persians.
Sebennytes	XXX.	Nectanebo I. Last king expelled by the Persians
	XXXI.	Darius III. Six years.
Alexandria	XXXII.	Alexander I., II.
Alexandria	XXXIII.	Ptolemies, Cleopatra, Berenice, Arsinoë.
Alexandria	XXXIV.	Roman proconsuls.

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favourable auspices for health of body, peace of mind, and growth in human culture. This picture I will now endeavour to place before your eyes.

But to make the matter as plain as possible, I must put it in a graphical form, and show by a chronological chart the true relationship in point of time between the Hyksos episode, and the beginnings of Egyptian civilization. This chart will show the four great empires of Egypt, beginning with that of the Pyramids and ancient tombs of Memphis, 5000 years B.C. And you will notice at a glance, that the 17th dynasty, that of the Hyksos, comes midway in the column between the time of that ancient empire with its oldest of earthly monuments and our own day. Perhaps 3300 years preceded the fall of the Hyksos dynasty, and 3500 years have succeeded it.*

Such has been the history of Egypt. Seven thousand years have passed since the fourth king of the first dynasty built the first pyramid of Cochomé, the first which greets the traveller going forth into the desert from the gates of Cairo.† Yet, even then, Egypt was an old country; its people civilized; its architecture grand in idea and perfect in execution; its statuary as natural as any group of Rogers' statuettes; its language not only formed but reduced to writing; its agricultural life rich with oxen, asses, dogs, and monkeys, antelopes, and gazelles, geese, ducks, and swans, and slaves of Numidia. But the horse and the camel of Arabia were wanting; they knew nothing either of the elephant or the giraffe of Africa; the sheep of Europe and the poultry of China are nowhere to be seen; nor had the house cat yet assumed her witch-role on the hearth.

* See Appendix B to this lecture.

† In his paper on the Antiquity of Man, read before the last meeting of the Ethnological Section of the British Association, meeting at Dundee, August, 1867, Mr Crawfurd, who is a believer in the multiple origin of our race, adopts Champolleon's date for the beginning of Egyptian history, 9000 years before Christ, and argues for an immensely older history, upon the ground that language, civilization, letters, arts, agriculture, and the domestication of animals are slow processes. Too much stress, however, must not be laid upon this consideration, for when genius speaks the times obey and hasten to realize its propositions, and to fulfil its prophecies. Sir J. Lubbock, although an advocate of the unity of origin, agreed with him upon the point of the antiquity of Egyptian civilization, and the necessity for previous ages of emergence from the savage life of the cave-dwellers.

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But these people at the beginning of written history had no ships for commerce, and could not have introduced what existed around the shores of the Mediterranean, or along the Indian Ocean. But what did then exist? The rest of mankind seem to have been savages, without cats also. Probably neither the horse, nor camel, nor elephant, nor sheep, nor pheasant, had yet been tamed, at all events not within reasonable reach of these rich farmers of the Nile. That they enjoyed a happy, peaceful, and sometimes a jolly life, is easy to see, for the walls of the Memphite tombs are covered with pictures of feasts, and games, and dances, and boat tournaments, such as amuse the populace of Paris in July; there you see poets chanting verses, and dancing girls with hair tressed up with plates of gold. But you may look around in vain for the symbols of any kind of warfare. Not a trace of military life is visible on any monument previous to the 12th dynasty: and very little trace of religion. How the dynasties were founded, or how they were overthrown, or changed, we cannot learn; nor how the priests, if any then existed, turned an honest penny. The deity had neither name nor image. Osiris was unknown. The dog Anubis is the only guardian of these primeval mansions of the dead, the first deity, as the first friend, of man. We can make out only the signs of a purely patriarchal civilization, in a land of peace and plenty. Each tomb is built by each farmer for his eternal residence. His effigy is seen in it, surrounded by the pictures of his wife, his children, his servants, his scribes, his dogs and green monkeys, and his household goods. And all this 3000 years before Solomon built his temple on Mount Moriah, or the Assyrian his palace on the platform of Koujunjik.

We may speculate upon the assertion that the Egyptians of the delta of the Nile sailed up the Adriatic and settled the delta of the Po, then crossed the Alps and descended to settle anew upon the delta of the Rhine, from whence they seized on all the smaller deltas of the British islands. We have nothing but fancy to guide us in determining how far the older civilization of the Egyptians modified the influence of the great emigrant race—the Phœnician—in forming the civilization of Europe. We have no sufficient demonstration of any such influence radiating from ancient

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Egypt, except in matters of religion, and through the intermediation of other races, of which more hereafter. For the present let me leave, impressed upon your imaginations, one clear image—the contrast, the marvellous contrast, between the two pictures I have drawn. On the one hand we have this picture of peace and plenty among the ancient landholders of the valley of the Nile. On the other hand, we have that picture of want and warfare dominating the life of the wretched savages in the pine-woods of Scandinavia, and standing for the condition of the human race, or rather of all the other human races existing at that ancient epoch, outside of the valley of the Sphinx.

Yet such a contrast still exists in all its grim integrity upon the earth. Compare the palaces and parks of England and New England with the wigwams of the west or the slave cabins of the south; with the utter homelessness of the Hottentot and Australian in the one hemisphere, or the wretched reflection of primeval barbarism among '*les misérables*' in Paris or in London. And so the world hoards up its old letters, although they can be only re-read with shudderings and tears.

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LECTURE VII.

ON LANGUAGE AS A TEST OF RACE.

THE subject of the language of man will engross our attention this evening.

Those who believed in the origin of all the human races from a single pair, found the question of the probable language spoken by that pair and their immediate descendants considerably simplified. The fathers of the Church took for granted that the language of the oldest writings which the Church accepted as sacred and divine was the language in which Adam and Eve addressed each other in Paradise. When the critics of a later age began to find reasons for believing that the Mosaic records had been compiled from the most worthy scraps of the most ancient written traditions, it only strengthened the claims of the Hebrew to be the language of the antediluvian patriarchs.

But when the science of comparative philology was discovered, the special students of certain special languages, in their enthusiastic devotion to their special studies, began to put in other claims for this high honour, and to dispute the pre-eminence of the Hebrew, contending that it must have suffered so many changes, no one could tell what it had been in the beginning.

As the learned world woke up to an appreciation of the beautiful structure and great antiquity of the Sanscrit, many were disposed to consider *that* sacred language of southern Asia the mother language of mankind.

Then came the Egyptologists, with their monumental letters, and improved chronology, antedating that of the Hebrews by several thousands of years. They proved that the Coptic language, although allied to the Hebrew, was in fact the language of the Pharaohs, before Abram had come

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out of Ur of the Chaldees. Coptic must therefore have been the speech of Paradise.

There were some to demand for the Armenian language the credit of being the oldest in the world. And there have been most learned Welshmen to parade the fact that their British mother tongue could afford a reasonable etymology for every one of its own words, in proof that it alone could be the aboriginal speech of the world.

But the progress of the science of comparative philology has extinguished, one by one, all these absurd pretensions, even without the necessity of a reference to the goodness of the foundation on which they rested, viz. the truth of the legend of a Paradise and a first human pair.

But although the science of comparative philology has been able to extinguish the claims set up by each individual language to be that which the earliest people on the earth spoke, it has not been able, on the other hand, to point out what was the original language. We are just as far removed to-day from knowing that as we ever were.

Comparative philology is one of the most beautiful and attractive of all the modern sciences. It is fresh and vigorous. It has an immense coterie of disciples and many masters. It has conquered a large territory and set up a splendid throne. It makes advances every year. It has established laws which are unshakable. It is a world of truth; no one doubts it. It is, in some respects, fully the equal of the other sciences. But in saying thus much, we have said all we dare to say.

In other and very important respects, the science of comparative philology is young and raw, undisciplined and disorganized; or rather, rising, as it has, like a Phœnix from the ashes of its predecessor, out of the cinders of what was known in the middle ages as the science of Language, it still retains, involved in its constitution, quantities of that unorganized magma, all the elements of which it is bound some day to reduce to perfect order. In this respect it is far behind the so-called physical and natural history sciences. Some of its most important principles have yet to be settled. Some of its grandest questions have hardly been announced. Its doctors still pursue the most opposite methods. Its books are not only full of irreconcilable contradictions; they do not yet state any

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grand body of universally accepted facts out of which fresh investigations can deduce acceptable generalizations.

The true principle for a *correct classification of the languages*, for instance, has not yet been established. Philologists have indeed worked out a number of fine groups, and settled to some extent their boundaries. They can talk to you about the Indo-Germanic family, and show you how it is broadly distinguished from the Shemitic family on the one side, and from the Tartar family on the other. They can separate the Teutonic languages from the Celtic and classic groups on the one side, and from the Slavonic group on the other. They can distinguish the southern or Teutonic from the northern Gothic or Scandinavian sub-families. They can designate seven or eight chief subdivisions of a single language, like the French. They can go much farther even than that, and count up its patois or local variations until they reach an incredible number.* And all this amounts to something certainly. It represents a vast amount of hard work. But it does not represent, as yet, *a law of classification*. There is no established and accepted classification of the four or five thousand languages of the earth. There is even the greatest difference of opinion among philologists as to the true principles upon which we are to decide whether a language actually belongs, and why it must be considered as belonging, to one group rather than to another. Some base the classification upon the grammar: others upon the dictionary. The science of comparative philology is now in the same state in which comparative zoology was before the days of Cuvier, when the bats were classed among the birds, because they lived by flying in the air; and cetaceans, whales, seals, walruses, &c., with fishes, although they breathed the air and suckled their young; and lemurs with squirrels, instead of with the monkeys, where they actually belong.

And, in fact, we may as well say at the outset, that all the great questions which have come up for settlement in the other older and maturer sciences come up again in some analogous form for settlement in this young raw science of

* See the variations on the words 'deux fils' in the Transactions of the Antiquarian Society of France (C. 9. 13).

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comparative philology. And how indeed could it happen otherwise? For the things which we call *words*, are *organic* things, like animals and vegetables. They have roots and branches. They grow and decay. They have fixed laws to govern their existence, like all other beings. They do not leap from our mouths, helter-skelter, as the toads and jewels dropped from the mouths of the daughters of the cruel stepmother in the fairy tale. They are not accidentally created. We are not their voluntary creators. They breed in us and issue from us, not only from our lips, but from our brains, by laws as regular and permanent as those which govern the conception and birth of broods of fishes, birds, or serpents. Language therefore must be a department of natural history. New expressions or idioms appear upon the face of human society just as new species and varieties of animals and vegetables have successively made their appearance upon the surface of the earth, and in the waters of the sea. And words and languages perish and are preserved in the history of literature, precisely like those fossil forms of extinct plants and animals which we study in the geological deposits of the past.

With the great fundamental principles of natural history therefore, which we have had before us already more than once during the course of these lectures, we have again to deal to-night. Philology finds the same lions in its path to the House Beautiful which have frightened the other sciences, that have preceded it in pilgrimage.

In the first place, there is the great possibility of spontaneous production, or equivocal generation, as the naturalists call it. Mr Crosse took certain mineral matter, boxed it up carefully so as to exclude the air, heated it so as to destroy all germs of previous life, and sent, for many weeks, a perpetual current of galvanism through it, so as to arouse the dormant powers of organic life. The result was, as he declares, that living insects made their appearance in great numbers. But the rest of the world doubts the fact; a few only believe. Now what say philologists as to the possibility of a similarly spontaneous origin of a *word* out of the raw stuff of thought? Some affirm that new words are continually appearing in all languages like Mr Crosse's *acari*. Others, on the contrary, stand by the old doctrine, that *like breeds like*, and that all living forms

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must come from germs or living cells, which are already organized nuclei of vital forces, or rather, in the language of the schoolmen, vital forms, *formæ formantes*. Such philologists affirm, therefore, the necessary previous existence of linguistic roots, and believe that all words must be developed out of roots; that the great business of philologists is to investigate roots in languages, to restrict the number of these roots in any language to the smallest quantity, and to compare the roots of different languages together, so as to obtain a true classification. A school of oologists exists, therefore, as really in the science of comparative philology, as in that of comparative zoology.

But when you come to consider these roots or germs of words, you find nothing in the shape of a settled principle. Some philologists consider all the roots of words as originally verbal, such as: to be, to go, to strike, to cut, to breathe. Others restrict this *verbal* character to a *few* roots, and call all the rest nouns, out of which verbs have been made. Some consider the root of a word reached when it is reduced to three letters; others despise roots which consist of more than two letters. But nothing tells more plainly against the existence of any well-made-out law than the different number of roots to which different philologues reduce a given language. The Sanscrit, for instance, is said to have 500 or 600 roots. But Kraitsir, before he died, had reduced the number, in his own opinion, to a little over 200. Haldeman thinks no language can show more than 300.

But the great question is about the spontaneous generation of these germs, or roots. Then, at what age in the history of man did they appear? Were there a certain number of aboriginal roots spoken by the tertiary, post-tertiary, or stone-age men? or have word-roots been making their appearance all down through history, one at a time, or in groups, sufficiently numerous to institute new branches of language, or new languages? Then again, by what law of life did the roots of words get created at first? or by what law do they continue to get created? And if there be such a law of life for these word-roots, does it include in itself a law of permanence, and a law of universality, i. e. does it secure the creation of a given root-word in *all* languages; and then, does it secure the *continued existence* of that root-word to the end of time?

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Or, on the contrary, is there a law of *change*, by which no original root-word has been able to maintain its integrity, but has fallen from its first estate and become depraved? or, to state in other words this last question, do we find, raging in this science of comparative philology, the same warfare respecting 'a law of development,' by which one word-form-species gradually changes to another, and so one language to another, by old roots dying out and new roots striking in to the common soil?

Let me take up two or three only of these questions, and state what I think is wanting to the science of philology to place it on a footing to do something for us in our investigations into the early history of the human races and their migrations. For, at present, in spite of the high pretensions of its disciples, I do not think that we get any ethnological light from Philology worth speaking of; but, on the contrary, I think that in the position which the science occupies, it casts a deep shadow of obscurity upon the whole subject of the human races. Whatever else, therefore, I must hurry over or omit to-night for want of time, or to avoid confusing your attention, this one thing I wish to make clear, my reasons for believing that the method of philologists must be amended, and to a great extent re-modelled, before we can get rid of some of the grossest errors in ethnology, or really obtain a complete view of the relations which the human races hold to one another and to the present state of things.

The origin of language may be regarded either, 1. as a supernatural revelation of a language already perfect to the first human beings; or, 2. as a power of language given to the first human beings in addition to all their other peculiar faculties as human beings; or, 3. as merely a superior human development of a general power of language (or faculty of expression) possessed by the whole animal world, inherent, in fact, in the constitution of all animated beings as well as man.

The first of these modes of conceiving the possible origin of language, as a divine revelation, was almost universally adopted by heathen philosophers and Christian theologians to a very recent date, and is still indulged by those who believe in Adam and Eve in Paradise. Although the most natural way of understanding the old legend that Jehovah

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brought to Adam all the birds and beasts and creeping things, that he might give to each of them its name, would be to suppose existing in Adam's mental constitution a mysterious faculty of representing what he saw and knew, by audible sounds, intelligible to his wife and children. Science, however, can take no note of the supernatural, unless it becomes natural and takes the oath of allegiance to nature. Nature itself is too supernatural to require any additions from the realms of human ignorance. And moreover, if there were more aboriginal human races than one, there would be needed as many repetitions of the same revelation of language; unless to each race a different language were revealed; in which case the confusion of tongues, at the building of the Tower of Babel, would have been anticipated.

The second and third modes of conceiving of the origin of language are the modes now adopted by men of science. And they only differ in degree according to our views of the relative dignity of man and the brutes. All philologists are more or less disposed to place among the natural attributes of man a faculty for expressing himself, and expressing the outside world also, in appropriate words.

Some go farther and say, that this faculty for vocal utterance of mental feeling is common to man *with* the brutes; that the brutes are *not* brutes, i. e. mutes; that the animals all have parts of speech; and that man has the faculty of speech only and simply because he is one of the animals. His faculty is larger and finer than theirs because his brain is larger and finer than theirs; because his mental, moral, and spiritual nature is more angelic; because his senses deal with a larger world, and his tastes are refined by civilization. But, however his poetry may soar, and his eloquence burn, and his prayers go up as acceptable incense before Him that sitteth upon the throne, and before the Lamb, these glorious phenomena of thought made flesh in language are as closely and eternally related to the bleating of the flocks and the warbling of birds as the infinite scope and sweep of solar systems in the heavenly spaces are closely and eternally related to the spiral flight of a bee when the hunter liberates it from his box, in a dingle of the forest, to guide him on to rob its hive.

It makes no difference to the main question of the origin

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of language, whether man takes the animals into partnership or not, provided he considers his faculty of language *constitutional.*

But now we approach the difficulties. *How* is human language constitutional?

It may be asked in reply: How is taste constitutional? How is conscience constitutional? How is any one of the bodily senses constitutional? The schoolmen have answered this as they have answered the other question, by saying that conscience is a gift from God. Religious people get over a similar difficulty by preaching and praying for a change of heart. The old philosophers went farther and very logically, when they made Taste a supernatural revelation; and we retain a fragment of their superstition in our popular use of their word Genius, by which they understood a veritable divine possession, analogous (but opposite) to diabolical possession. But no one has gone so far as to make our *bodily senses* supernatural. We let the physiologists alone and wait patiently for their newest and best descriptions of how these faculties are constitutional. In like manner we read Paley and Locke, and Kant and Conte, and Sir William Hamilton, and Mill and Spenser, and all the rest of the psychologists, to get the latest and clearest and most consistent views of the constitutionality of our higher powers, taste or the faculty of liking, conscience or the faculty of judging, worship or the faculty of serving. Why, then, should we not hear Schlegel and William von Humboldt and Max Müller describe the latest and best modes of conceiving how language, or the faculty of self-utterance, enters as a harmonious part into the human constitution?

I say *modes,* and not *mode,* of conceiving, because these highest philologists are not agreed. There are four theories of the way in which a constitutional tendency to language in man may work itself out, and produce words, or if you please roots, or germs of words.

Without asking you to take my names as perfectly descriptive of these four methods, but only as sufficiently suggestive to make my descriptions plain, I will call these four ways:—

1. The method by imitation.
2. The method by interjection.

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3. The method by sympathy.
4. The method by invention.

The first theory of the formation of words, by *imitation*, supposes that men were originally children, or, if you please, monkeys with superior vocal organs, capable of reproducing all the sounds of nature which fell upon the ear; and that they necessarily called the dog 'bow,' and the cow 'moo,' and the sheep 'baa,' before they could discover their properties and invent other and higher names. You are aware that the ancient grammarians termed the whole class of such imitations 'onomatopœic' words, and that this term is still in constant use. Our boys are taught at school that such words as *hiss, rattle, clatter, splash,* and many others, are natural attempts to make language out of the noises of nature. And it is no doubt so. All languages have this kind of words. Everybody betakes himself to imitation when he hears a new sound in nature which has not before been named.* But, on the other hand, it is curious to see how little resemblance exists between the names of a natural sound in different languages. It is as if the ears of different races heard these sounds differently. To understand why, let any one listen to some inarticulate sound—for example, the roar of a bull,—and observe how circumstances alter its character,—how it is one thing when near, and another when far away,—how one might think at this moment that it sounded like *low*, at that moment like *ko*, at another like *moo*, at a fourth as if it had no consonantal beginning, at a fifth as if it had a consonantal ending, &c. It is impossible that all human language should have arisen from so meagre and so indefinite a stock of primary imitations of natural noises. To say nothing of the necessary expression of purely mental creations—the intransitive verbs to *be* and to *have*, for instances,—and a hundred other equally aboriginal and indispensable words in every language, for which no sound in nature ever could have stood as model.

The second theory, that of *interjection*, provides for the

* I have a little cousin three years old who began to call a pencil *rex* (rech), and has continued to do so ever since. I know of no other origin for this word than an attempt to imitate the harsh scratch of a slate pencil on a slate, although his parents are not aware that it had such an origin.

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difficulties which are raised in the way of acccpting the theory of imitation. It is supposed by many that the rational soul of man struggled into speech, as the Christian enters the kingdom of heaven, by violence. That at first the communication of man with nature and with his fellow man was like that of the animals, and like that of idiots, by cries and yells, by groanings and sighings, by rude attempts at varied musical notes, by hissings and mutterings and murmurs, gradually getting modulations of their own, and falling into series under the government of the memory and the judgment, as these became cultivated by exercise. Certainly there are interjections in all languages, ohs! and ahs! for wonder and admiration and complaint. But when we compare the interjections of different languages, we soon perceive that there exist but half-a-dozen which can be called universal, or could serve as a starting-point for language. The moment this narrow charmed circle is past, all uniformity ceases, and some other law of word-making must be supposed to interfere. What resemblance, for instance, can be traced between the English interjection *alas!* and its German synonym *leider!* The English *wo!* is the same as the Latin *vue!* (pronounced waï), but the French *hélas!* has not the least likeness to the Pennsylvania-Dutch *autsch!* If there be an interjectional common language for mankind, then it must be so beclouded by differences in the vocal organs, in the passions, and in the mental experiences of the different races, and its root-words must have suffered so much change, that all attempts to use it as a guide in ethnology must prove futile. At the same time, the interjectional efforts of the soul in the direction of language cannot be lost sight of in attempting to explain some of the mysteries and curiosities of literature, as I will have occasion hereafter to show. And Dr Kraitsir was perhaps nearer the truth than many of us imagine, when he taught that the native interjections of the voice went forth from the mouth under the influence of a genuine *entente cordiale*, or permanent good understanding between, first, the body of man and his mind, and secondly, between the mind and surrounding nature.

For the third theory of language, then, I use the term *sympathy*. Dr Kraitsir's interpretation of it is only one

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of several. Other philologists describe it and illustrate it in somewhat different ways, but they all come to the same thing in the end. Now the nature of this sympathetic relationship existing between man and nature is perfectly mysterious, and we may well be prepared for complete mysteries in its vocal manifestations. The first formation of language must be a great mystery on any theory. But it is a phenomenon no stranger than the newborn child's knowing how to suck. When I give you one or two illustrations of Dr Kraitsir's views, then you will remember how deep into nature these magic influences penetrate; and how the automatic adjustment of the crystalline lens of the eye to objects of sight according to their distance from us, is as inexplicable an act of the brain as any automatic adjustment of the tracheæ to the objects of conversation.

To see, then, how an act could be expressed in a word, let us take for an example the act of *going out*. What is the going to be referred to? Dr Kraitsir answered: to the *breath;* and what the *out?* Answer: to the *mouth*. If now we can make the breath perceptible to the ear, first while still within the mouth, and then after it has issued from the mouth, and if we can give our auditor a clear idea of these two things *in connection*, we shall have expressed '*going out.*' Let us then first make a noise in our *throat*, i. e. pronounce the guttural *k;* then let us make a noise of wind issuing from our lips, or rather issuing from between the tongue and the teeth, i. e. pronounce the sibilant *s*. The word for *going out* will then be simply the two letters *k-s*, pronounced together, *ks*. This is the actual Latin word *ex*, out of.

If you wish a more complicated instance, I will give you Kraitsir's favourite example, which always made me smile, I confess, but which furnishes a very perfect example of the mode in which this theory of the sympathetic formation of language applies its principles.

How can we imagine that the human mind would act upon the larynx and mouth so as to give an outsider the idea of abstract solidity, matter, body? A body is matter in three dimensions, vertical, horizontal forwards, and horizontal sideways. Now the organs of speech consist chiefly of the throat, the tongue, and the lips; the first is

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vertical, the second horizontal forwards, and the third horizontal sideways. If we take, therefore, a guttural, a lingual, and a labial, we can with these three sound the three dimensions of matter, i. e. express the idea of a body in the general. Thus:—K·R·P, *corpus*, the Latin word for body. From this word can now be formed nouns, verbs, adjectives, adverbs, &c., expressing modifications of this idea of solid body, *ad libitem;* such as *grip, grab, grave, engrave,* &c.

The difficulty in the way of accepting such a system of etymology is exactly the objection we feel to letting children drive a fast horse,—it will run away with them and smash everything to flinders. All the most accomplished philologists of our day, all the patient and successful investigators into the historical etymologies of words,—beginning with Jacob Grimm, the father of the modern science of comparative philology, and including such men as Bopp and Pott, and Schott, and Kahlgren, and Rochrig, Haldeman, Whitney, Max Müller, Ernest Renan,—set their faces dead against what they consider to be only a revival of the wild vagaries of the fanciful philologists of past times, from the old Cratylus of Greece to the new Cratylus of Oxford, the Evanses, the Pocockes, the Davises, the Cannes, and a host of other names, most erudite and ingenious people, but working on the old and false system of mere analogy, a system which we dare not now return to, because it would be subversive of all the laws of letter-variation and word-derivation, which have got themselves established and illustrated within the last thirty years as fully as any of the laws of physics or natural history.

If you wish to see how the old system of etymologies is abhorred and repudiated by the masters of the new system of linguistic mutation and derivation, I would refer you to the second series of Max Müller's Lectures on Language. He is particularly severe upon the first two theories which I have enumerated,—the method by imitation, which he calls the 'bow-wow theory,' and the method by interjection, which he calls the 'pooh-pooh theory.' Speaking of the first, or bow-wow theory, he says, 'the onomatopœic theory goes very smoothly as long as it deals with cackling hens and quacking ducks; but round that poultry yard

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there is a dead wall, and we soon find that it is behind that wall that language really begins.'

To illustrate the ridiculous excess to which the second or pooh-pooh theory may be driven by its ignorant advocates, he recites from the Honolulu newspaper, the Polynesian, of 1862, an etymology of the Hawaian word *Hooiaioai, to testify*, viz. from five roots hoo-o-ia-io-ai, meaning causation, interjection, pronoun definite, rapid and thorough movement resulting in realization and completion,—or in English words, *make that completely out to be a fact*, Hooiaioai; *testify to its truth*. Nothing could well be more ridiculous. And yet our libraries are filled with old volumes on language containing literally myriads of etymologies as ridiculous, and more ridiculous than that.

To take another class of etymologies, from the list of proper names of persons in the Hebrew Scriptures: when their compilers explain the change from Abram to Abraham, by the announcement that he was to be the father of many nations, because in the Hebrew of Solomon's day *ab, rab*, and *am* were the three words for *father, many*, and *people*, without reference to the fact that his original connection was with central Asia and its languages, why should we accept their etymology? How evidently has the story of Sarah's laughter been inserted in the legend of Isaac's birth, in order to support the etymology of his name from the Hebrew verb to *laugh!* The explanation of the name of Moses: 'because he was drawn out of the water,'—are we to prefer it to that of the monumental Egyptian proper name MAS, which means a *child?* or must we seek still other fanciful resemblances to other Egyptian roots? All such etymologies, unsupported by well-known facts, capable of comparative investigation, it is a waste of time to quote, and a drawback if employed in the study of ancient history. The method is a false one,—radically false.

But let us not be frightened away from our dinner of honest mutton chops or noble roast beef because French cooks can deceive the traveller with ragouts of cat when they call for hare. A Cuvier will eat his cat with great nonchalance, and hold up one of the bones to the landlord after dinner, remarking with a smile that his hare must have been a most singular specimen, having an anatomy analogous to the carnivores.

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When a transcendental philologue constructs an etymology for such a word as *bersil*, the Hebrew word for iron, out of the Hebrew verb *peres*, to pierce or cut, and a supposed determinative final letter *l* meaning through, the conclusion is as empirical and unscientific as fanciful and untrustworthy, as when the ancient Talmudists derived *bersil* from the initial letters of the names of Jacob's four wives, Bilhah, Rachel, Zilpah, and Leah. But when a comparative philologist, obeying the canon of modern science, that 'no scripture is of *private* interpretation,' takes up the study of all the names of iron in various languages, and as one of a whole group of metals, and perceives, first, that when reversed, the Shemite name for iron is the Indo-Germanic name for another of the metals, *silber;* and secondly, that its first syllable, *ber*, is also represented by the Latin word for gold, *aur*, the German *baar*, the English *bullion*, the French *bague* (originally *balg*, a golden ring), and other similar analogues,—and that the second syllable, *sil*, has similar relationships with *cesel*, *chalkos*, &c., &c.; he is on the high road to some valuable result, which his investigations will be sure to reach if patiently and carefully pursued.

The question is not what etymologists who are ignorant of, or indifferent to, Grimm's laws of mutation have done with the roots of language; but the question is, how did the roots or germs of language originate? Müller himself distinguishes between these questions. 'There is *one class* of scholars,' he says, 'who derive all words from roots according to the strictest rules of comparative grammar, *but* who look upon the roots, in their original character, as either interjectional or onomatopœic. There are *others* who derive words straight from interjections and the cries of animals, and who claim in their etymologies all the liberty the cow claims in saying *mooh*, *booh*, or *ooh*, or that man claims in saying *pooh*, *fi*, *pfui*. With regard to the former theory, I should wish to remain entirely neutral.' It is only the latter that he opposes. He does not pretend to say how much of the language of the first savages of the earth consisted of imitative cries and interjections; but of this he is quite sure, that the historical languages of after times obey laws of mental growth and rational arrange-

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ment, which are our only guides through the forest of etymology.

Professor Pott even denies that the root-words of languages ever were words—spoken words. He thinks that they are mere abstractions, obtained by our analysis of languages now spoken. He says, if they existed at all in early ages, they existed merely as dim, vague, floating, formless ideas in the savage brain, and came out in that ancient savage speech, sometimes in one form, sometimes in another, at the whim of the speaker, or the promptings of the moment.*

But Müller cannot take so German a view of roots. He has imbibed in Oxford too much of the practical genius of the English. He leaves the ghosts of words behind him, with all the other ghost faith of his fatherland. He thinks the ancient roots of words were the first actual words in use; but then, they were used without any grammatical definition. 'I think,' says he, 'that there was a stage in the growth of language, in which that sharp distinction *which we make* between the different parts of speech had not yet been fixed, and when even that fundamental distinction between *subject* and *predicate*, on which all the parts of speech are based, had not yet been realized in its fullness, and had not yet received a corresponding outward expression.'† He refers to languages at the present day in this germinal condition. In Chinese, for instance, *ly* means *an ox, a plough,* and *the act of ploughing; ta* means *great, greatness,* and *greatly.* In Egyptian *an'h* meant *life, living, lively,* and *to live.*‡ Other languages are seen just coming out of this first stage into a second, where the root is retained, and another root is attached to it to show the mental distinctions. In the Polynesian dialects any verb may be used unchanged as a noun or adjective, by adding *kua,* or particles of affirmation, and *ko,* or particles of the agent.§ In our own English we speak in the same way; we say *make, make-r, make-ing.* Müller gives a still more striking illustration from the language of children, that

* Etymolog. forschungen, ii. 95, in Müller, p. 95.
† Second Series of Lectures, p. 95.
‡ Bunsen's Egypt, i. 324, in same.
§ Hale, p. 263, in same.

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world of perennial savagery, that fountain of antiquity welling up for ever at our feet. And let me here assure you that some of the finest laws of comparative language have been discovered by watching the speech of children. Out of the mouths of babes and sucklings He hath ordained praise. And he who thinks that he can settle the laws of morality, or of reason, or of language, without the closest and most patient investigation of infants and young people, will never become a master in any of the schools of the future,—of that he may rest well assured.

What, then, is the process of forming word-roots in the mouth of children? A child says 'up! up!' meaning, 'I want to get up on my mother's lap.' In his mind noun, verb, adjective are completely confounded and form an ideal unit. It will be months or years before he can separate the subjective *I* from the objective *mother's lap*, or the *want* from the *action* of getting up into it.

But, after all, we do not get an idea of the origin of this word *up*, which stands for so much. Our children take it from ourselves. We got it from our English ancestors; they from their Saxon forbears. How far back it can be traced we do not know. We know of no sound in nature of which it could have been an imitation. We know of no explosion of feeling to produce such an interjection. It would be hard for Dr Kraitsir to devise a spiritual explanation of its sympathy with what it represents, whether as *up*, *upward*, or *upon*; and if he could, the explanation would not stand good for its correspondences in other languages, such as *auf* in German, *su* in Italian, or *ανω* in Greek.* And what is true of this word is true of all other unimitative and uninterjectional roots, the world round, and the ages through.

Have we no explanation, then, for the origin of the great body of aboriginal root-words, and for the numerous primary monosyllables which we use every day? I must repeat what I said at the beginning of this lecture, that the

* The sound of *up* (*ab*, pronounced *ap*) is employed by the Germans to express the very opposite sense of *down*. The French have no word at all corresponding to the English *up*, for their *en haut* is the English *on high*; and their *sus* is never used but in composition. That curious example of 'polar meanings,' *au dessus* and *au dessous*, is repeated in a wholly different form in the German *auf* and *ab*.

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science of language is in its infancy. But still we are not wholly helpless. You remember that I enumerated four theories of the origin of words; but I have described only three thus far: the method by *interjection*, the method by *imitation*, and the method by *sympathy*. Each of these methods are available for some words; and the method by sympathy plays an important part in the construction of large sections of the historical languages, as I may perhaps make clear hereafter, in discussing the formation of the alphabet. But I must now describe to you the fourth theory, or the method by *invention*.

It is denied by many philologists that a new word is ever invented. If by this be meant out of the head, as we say, that is, without any reference to existing words and things, it may possibly be true, although I doubt it. But if it be meant that no new words have ever been deliberately constructed and put into circulation by intelligent human beings, words which had no connection with the organic development of language, I think that all human experience, certainly all literary history, proves the contrary. Nay, I think that I can show that the majority of the words now used by civilized people are *inventions*, or modifications of purely invented words. Nay more—and this is the principal thought which I wish this lecture to leave impressed upon your minds—there is a vast, a dominant element in language which I call the *bardic* element, because it consists of words invented by *bards* (poet-historians and poet-priests of old times), by *druids*, if you like that title better,—an element which has superseded and overgrown the more ancient and savage elements of language, just as the oak forests of the Bronze age superseded the pine forests of the Stone age, and as the beech woods of the Iron age superseded the oak forests of the Bronze age—an element produced by the cultivation of the civilized intellect; an element of religious, moral, and social terminology, which now forms the chief and almost the sole bond of communion between the various languages of the earth. And philologists have so far ignored, despised, or overlooked this element, as to throw, as I have said, a profound shadow over the early history of man, and a well-entertained suspicion upon the best conclusions, not only of linguistic ethnology,

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but of their own science of comparative grammar itself.*

I shall attempt nothing more this evening than to illustrate these assertions, trusting to the incidental topics of the remaining lectures of my course for something like a reasonable demonstration.

The great effort of *linguistic* science has been to prove that the present races of men came from one original race, by showing how all languages now spoken by these races can be traced back to root-words which must be supposed to have formed one original language. I have already said how many difficulties start up in the way of any such showing, and how little prepared our system of linguistic principles are for such an undertaking. But furthermore, language is the utterance of man's spiritual nature. It must therefore be commensurate with that nature. It must vary as that nature varies. It must grow with its growth. We see the process of development of language parallel with the development of mind in every child. Every child drops the first language it has learned to speak and takes a new and better language suited to its advancing years. Again, the language of the boy is exchanged afterwards for the language of the man, when observation, reading, and society have enlarged the mind still farther.† See how the turgid style of the poetic youth disappears before the solid matter-of-fact style of the man of business. See how the Johnsonian polysyllabic Latinism of five-and-twenty gives place to the nervous Saxon monosyllables of fifty. How smooth and fluent are Carlisle's first pages! how harsh and unreadable his later books! On the other hand, see Edmund Burke give up his chaste and simple early English for flowery and fantastic periods in his later years. All language is a daguerreotype of the soul. It is inconceivable that the men of the Bronze age, even if they were lineal descendants (which they probably were not) of the men of

* Prof. Whitney, in his lectures on Linguistic Science delivered at the Smithsonian Institution, in March, 1864, says, 'It has quite recently been found that language is the principal means of ethnological investigation, of tracing out the deeds and fates of men during the pre-historic ages,' &c. All this ought to be true, but it is not yet true.

† The boy swears in Basque, *by Jingo!* (*Jinco*, Basque for God), and the man in Greek, *by Jove!*

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the Stone age, could have spoken the same language with that of their ancestors. Later civilizations must have instituted still different languages. All language is in a state of flux. Savage languages, as has been often asserted, change rapidly from generation to generation. Our north-west Indians, we have been assured, could not comprehend their great grandfathers if now alive, and hardly their own grandfathers.* Nothing but writing down a language can save it from destruction. Nay, that will not do it. The Hebrew is gone; the Sanscrit is gone; the ancient Syriac is gone; the Babylonian, Assyrian, Egyptian are all gone; and all we know of these mammoths of past mind, we learn only from scattered fragments of them fossilized in parchment or in stone. Look at the changes which English has sustained since Magna Charta was engrossed. Nothing but printing will save a language from decay. Stop the growth or prevent the change of mind, and you can stop the growth and prevent the change of language. Printing does this in part. Printing fossilizes mind. The newspaper is an epidemic of paralysis. When 30,000,000 of people wake up in the morning together, sit down to their breakfast at the same hour, call for 5,000,000 of copies of the same column of telegraphic despatch-news printed over-night, and one half of them make their remarks upon the news in the same democratic terms, and the other half in the same aristocratic terms, the good God has arrived at the end of his individual creations. Individuality is gone. One language at least is fixed.

Now, if in all times this law of the growth and change of language in dependance upon the elevation of man's life out of savagery by civilization, and of the development of his intellect by culture, has been in action, how absurd is it for philologists to suppose that they can recover, by the examination of either present grammars or present vocabularies, the primeval languages of the Stone age; or determine the alliances of pre-historic tribes; or trace the migrations and intermixtures of these tribes from one side to the other of the globe! All those primeval languages are buried up, deep underneath a mass of pre-historic lan-

* This was positively denied, however, by one of the first missionaries of the Hudson Bay stations, who told me he formulated the northern languages, and found them rich and harmonious and almost invariable.

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guages, which in their turn have been overlaid by the old historic tongues, which in their turn have been overlaid by the dialects now spoken. As well might the geologist expect to make out the lithology and structure of that inaccessible primeval crust which we must believe to exist beneath the Laurentian system the base of which we have never yet seen. As well might he expect to study the old Silurian and Devonian limestone, slate, and sand deposits by analyzing the cretaceous and tertiary marls and clays which have succeeded and replaced them in the present surface. The philologist is even *worse* off than the geologist; for there are no Laurentian, or Huronian, or Silurian mountains of language, outcropping from and overhanging the more modern tide-water plains of literary history. The oldest language we have any chance to study is the Egyptian, a language of only 8000 years' standing, and therefore, in geological phrase, a quaternary deposit belonging to the present order of things, a language already civilized, full of the terms of home and farm life, capable of moral and religious expressions, and so nearly akin to English in its staple that I might have taken from *it* my illustration of the word 'up,' a few minutes ago, instead of from the English, for the Egyptian word was 'ap!'

When Professor Whitney therefore—one of the best philologists of the new school now living, and an honour, as he certainly is, to the science of comparative grammar—asserts, as he did in his Smithsonian lectures of last year, 'that it has been recently found that language is the principal means of ethnological investigation, of tracing out the deeds and fates of men during the pre-historic ages,' I demur emphatically to the allegation. I do not believe it. Unless by *pre-historic ages* he means merely the ages which *immediately* preceded the opening of monumental and literary history; unless he is willing to exclude entirely from the discussion that immense, back-stretching line of ages during which the human races were unlettered, unhistoric, uncivilized, and undevout, all record of which is lost beyond redemption by philology, and only to be recovered as a part of the geological history of the earth and its inhabitants by the combined efforts of the geologists, the palæontologists, zoologists, and archæologists, who have it entirely and justly in their charge. The philologists have

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nothing whatever as yet to do with it. Nor will they have, until among the fossil remains of primeval men some trace of letters shall be discovered. If, for instance, bones in some Poitou cave be really found scratched with Sanscrit letters, then let philologists step in and join the conclave. But even then language will not be, as Professor Whitney says, 'the *principal* means of ethnological investigation.'

The great mistake made by the new school of linguistics is in supposing that there is no *fourth* theory of language; no *fourth* way in which words originated: viz. by actual *invention;* no part of language which encrusts and conceals the organic structure. The fact is, mankind may be divided into two parts, like the body and its skin. Richardson says that the characters in his splendid old novel of 'Sir Charles Grandison' are men, women, and Italians. History says that the characters in its drama of human life are men, women, and priests. Philologists of Professor Whitney's school busy themselves entirely about the men and women, but forget all about the priests.

There is a language peculiar to every bird and beast. There was a language peculiar to every human race. There is a dialect characteristic of each village, township, city, province of each nation, of each tribe of men now living. These are great studies for the philologist. They can be separately analyzed, and they can be compared together. Their individual histories can be worked out to a certain distance back, as far as there are any literary records. They can be grouped, and to a certain extent—a very moderate extent—classified. They even afford stuff for most ingenious and perfectly scientific and trustworthy conclusions, such as Grimm's laws of mutation and derivation. But they will not make of the philologist a trustworthy ethnologist. Why?

Because there is something else which he forgets to study, which he refuses to believe in. *There is a language of priests.* Because this language of priestcraft exists *in among* local dialects and national languages. Nay, because it is so interfused with them as to form a component part of their constitution. Every language of modern times is stamped with this priest-language all over on the outside, is full of it inside, in its flesh and in the marrow of its bones. No anatomical preparation to be seen in a

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museum is more completely streaked and analyzed to the eye, by the red substance of injection, than is the English, the French, the Arabic, the Hindu, the Zingali, the Burmese, the Japanese, the Tasmanian, injected and confused with a priestly language to the eye of the philologist who will consent to recognize its existence.

What this priestly language is, and how it seems to have originated, and why it is thus disseminated through all the various languages which are spoken by the various races of mankind, I shall endeavour to explain in my next two lectures on architecture, and on the alphabet. But you will agree with me, that, if such an element can be proved to exist in various languages, it must have the effect of greatly confusing and mystifying philologists who ignore its existence. And still more, if this element, common to many languages, is in fact the principal or predominant one of the elements which constitute their vocabularies, you can imagine how it must obliterate the original distinctions between languages, and render the task of tracing the descent of races and their migrations previous to the introduction of this priestcraft, almost if not entirely hopeless.

Here I should properly end the lecture of this evening; but a few words, before we part, on the classification of languages found in the books. The text books of philology distinguish languages as of three kinds:—1. The monosyllabic, 2. The agglutinate, and, 3. The inflected.

The first kind are those which speak each word-root by itself, preceded and followed by other word-roots, each carrying its own idea in full, and leaving the hearer to find out the grammatical relation between them by his own wits, or by some accent or emphasis or musical modulation of the speaker's voice. The specimen of this kind usually given is the Chinese.

The second or agglutinate varieties of language combine the monosyllables which grammatically belong together into polysyllabic words, like the Saxon words for-bear, cart-horse, and into fixed grammatical idioms like *to be, to do, to insist, according unto,* &c. And this process can be carried on to any extent. Words which have been compounded of three or four words can be contracted to monosyllables and then compounded anew, as an economi-

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cal family can live three days on a single round of beef, by rehashing it with other portions of their meals, from day to day. I may find occasion to illustrate this boiling-down and cooking-up process in language hereafter. Its phenomena are very curious and instructive.

The third class of languages, the inflected, are so called because their words are not served up pure and simple, alone or in courses, but garnished with prefixes and affixes, which are as variable as Soyer's recipes. The old grammarians called these variations 'cases,' or fallings-off from the upright simplicity of the word-root; and they gave names to these cases, nominative, genitive, dative, &c., for the purpose (apparently) of rendering it as difficult as possible for the grammar-school boys of Boston to pass their examination at Harvard. Our own grammatical grandfathers, in their wisdom, saw fit to transplant that barbarous Greek paradism into an English soil, where nothing but the hop-pole support of the birch rod has ever availed to keep it in sickly existence. Yet we still teach our wondering babes to poll-parrot 'nominative, a man,' 'genitive, of a man,' 'dative, to a man,' 'accusative, a man,' 'vocative, oh man!' 'ablative—*non est inventus*'—although the whole genius of our language, which belongs to the second or agglutinate class, cries shame so audibly that the babes themselves have heard it. English 'cases!' there are no such things! In Latin and Hebrew and Sanscrit inflectional forms have been dread realities. How such a burden could have been borne by the educated classes at Rome and Athens and Jerusalem it is hard to comprehend. Some philologues have doubted that the Latin of the schools ever got spoken by any class below Hortensius and Cicero. But when we turn to our North American Indians and see how complicated the grammatical combinations and inflections of their dialects have been, we may believe that the very shepherds of Ephraim knew how to use the seven forms of the Hebrew verb—kal, he cuts; niphal, he is cut; piel, he cuts hard; pual, he is cut hard; hiphil, he causes to cut; hophal, he is made to cut; and hithpäel, he cuts himself—as glibly as the oldest rabbi of the Bagdad or Tiberias schools. In fact, there is no limit to the ability of an educated boy, in the direction in which that education goes. Some of the most difficult languages,

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completely artificial, and admirably adapted for variety and precision in their use, are the languages of savage tribes existing at the present day. There is no good reason therefore for denying that the most ancient men of the oldest Stone periods had languages as complicated and as inflectional as any now known to exist, and with a vocabulary commensurate with the variety of things by which they were surrounded, and of actions which their life gave birth to.

It is not to be admitted for a moment, that we must trace back the existing languages to their word-roots, and suppose these word-roots to have constituted the early language or languages of man. We have no liberty to suppose that the earliest languages were monosyllabic. As I have said before, it is not at all established that languages become monosyllabic as we trace them backward. On the contrary, there are many things to show that the tendency of all languages is to grow more and more monosyllabic in the course of time, that is, in the direction towards our day, not backward towards the beginning. It is not proved that 'China and Further India,' as Prof. Whitney, and many others with him maintain, 'are occupied by races whose languages are monosyllabic because they have never grown out of that original stage in which Indo-Germanic speech had its beginning.' * The great Orientalist, Abel Remusat, even refuses to admit that the Chinese is entirely a monosyllabic tongue, and instances such compound words as *tsiang-jin*, workman (Zimmermann), and *tschung-sse*, bell-master, to justify his doubts. Beste shows that there are only 100 real monosyllabic words out of 8000 which the Chinese scholars use; and although he thinks that the old Chinese was monosyllabic, he shows that the modern has 15 kinds of composition. Ampère condemns the doctrine of Chinese monosyllabism based merely on the ground of single characters. Abel Remusat shows how the Chinese terminal *-jan* in adjectives is exactly equivalent to the terminations *-ment* in French (from *mens, mentis*), and *-lich* in German. Plath explains how early introduction of Chinese monosyllabic writing prevented the rise of grammatical inflexions; and while maintaining that the meanings of affixes remain apparent,

* P. 111, Smith Rep., 1863.

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gives many instances of one root retaining many meanings, instead of receiving new meanings by affixes.*

I have shown in a paper read before the American Philosophical Society of Philadelphia not long ago, and published in their Proceedings, that when one classifies the names which have been given, by people speaking many different dialects and languages, to some one common and familiar and unmistakable object in nature, such as *wind*, or *fire*, or a *stone*, or the human *head*, or *hand*, this remarkable result is obtained: namely, that every organic utterance and shade of utterance possible to the human organs of speech, labial, lingual, dental, nasal, and guttural, has been employed to express the self-same object. I pursued the inquiry only through two or three hundred of the several thousand dialects and languages of the present or comparatively modern days; and yet in this small and hap-hazard collection it is perfectly apparent, that while in one country an object may be called *ba*, in another it will be called *da*, in a third *la*, in a fourth *na*, in a fifth *ga*; in others *ap*, *at*, *ar*, *an*, *ak*; in others *bar*, or *dar*, or *lar*, or *nar*, or *gar*; in others *dab*, or *nal*, or *pad*, or *lag*; in others other combinations of these elements will be in use, in the form of a simple monosyllable; in others a more complicated system of dissyllables or trissyllables will exist; and here and there long words will have grown up out of one or other of the original simple elemental organic sounds;—and all these forms are in existence and in daily use in one age; and all these numerous modifications of utterly diverse lingual elements are in constant employment to express one thing, and that one thing a simple, unmistakable object of nature, affecting the senses of all mankind alike.

I will close this lecture, then, by stating again, and upon this new basis, my conviction that most of the generalizations of the science of Comparative Philology—those which take hold of all the larger problems of human history, the origin of languages, the migrations of nations, the diversity of races, the development of mythologies—are as yet grand failures; and that a much more thorough-going method, a much profounder synthesis of facts, is needed to lead us to the desired end of our researches in this field.

* See his theory at the bottom of page 216, Sitzungbe: R. Bair., Acad. 1861, II. iii., and top of p. 217. On the Tone Speech of the old Chinese with two pages of radicals, 161 in number (p. 212).

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LECTURE VIII.

THE ORIGIN OF ARCHITECTURE.

THE Fine Arts preceded Belles Lettres in the order of time as well as in the order of a philosophical classification of the Intellectual Sciences. Men knew how to build before they knew how to write. You may be surprised that I interpolate this lecture on Architecture, between my last lecture on Language and my next lecture on Literature. But I follow the order of nature. The soul of man endowed with language utters itself first in sculpture and painting, then in literature, then in moral and beneficent deeds, and finally in acts of worship,—successively employing higher and higher faculties upon better and nobler materials. In the first stages of his savage existence man wasted most of his time and energies waiting on nature; watching patiently for the rise of a trout, or for the approach of a deer. Much of this time was whiled away in reverie. The hunter lived an inner life of mere perception; a continual stream of paltry observations flowed through him, having merely leaves and twigs, spiders and butterflies, occasional startings of bird and beast and glimpses of the outside sky and distant landscape, for their only objects. This was no miserable life! It would be maligning the Divine Creating Charity to suppose it. It is the life of all animals—and they are all happy. So were the early races of mankind. So are all men yet. Come we to speak of *Happiness*, we speak of that which God has made universal. It is a synonym for Life. Therefore we call God good. And the young man who leaves Harvard or Yale to tramp through the woods of the Alleghanies with a transit over his shoulder, or a level-rod in his hand, will soon learn how happy his first ancestors must commonly have been; and why the grave and me-

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lancholy Indians (as we call them, in our ignorance) are so full of fun and frolic at all times when not subdued by hunger, fear, or drunkenness.

Now, the first and most natural and easy language of this animal happiness, after gesticulation, is sculpture. Hence all active savages amuse themselves with whittling. Witness all our boys, and all the grown-up boys of our Western country. The practice has been universal to all races, through all ages, from the beginning. It is the origin of sculpture, which in its turn made literature possible; for one of the oldest forms of writing which we know, the Irish Ogham character, was whittled out on sticks; and the early Egyptian characters were cut in stone. The tendency to employ the hands while the body rests is greater in cold climates than in hot ones; and therefore we should expect to find earlier traces of sculpture in the temperate zones. But sculpture is absolutely universal, and commenced with the appearance of man upon the earth.*

The earliest traces of it which we have (as yet) discovered, are on the scratched bones of the diluvium and

* The ingenious author of Essai sur l'Inégalité des Races Humaines, M. A. de Gobineau (Paris, 1853, Phil. Lib., vol. i. p. 356), has a theory that the artistic genius was equally foreign to the natures of the three great type races, yellow, white, and black, into which he divides mankind; and that it did not make its appearance until the white and black race mingled. 'Thus, also, by the birth of the Malay variety there sprang from the yellow and black races a family more intelligent than its double parentage; and again, from the alliance of the yellow and the white there issued means very superior to the populations purely Finnish, as well as to the Melanian tribes. I do not deny it,' he continues, 'these are good results. The world of arts and noble literature result from mixtures of blood, inferior races ameliorated, ennobled: these are marvels to applaud. The small are elevated. But, alas, the great at the same time are abased, and this is an irreparable ill not to be compensated. From the mixture of race come also refinements of manners, ideas, faiths, especially sweetenings of the passions and desires. But these are transitory benefits; and if I must recognize the fact that the mulatto, of whom one can make a lawyer, doctor, merchant, is better than his negro grandfather, wholly uncultivated and good for nought, I must avow also that the Bramans of primitive India, the heroes of the Iliad, and those of the Schahnameh, the warriors of Scandinavia, all phantoms so glorious of races the most beautiful long since vanished, offering an image of humanity more brilliant and more noble, were especially the agents of civilization and grandeur more active, more intelligent, more sure than the mixed peoples, mixed one hundred times of the present epoch, and yet already they were not pure.'

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the cave-mud deposits. Many of these are merely marks left by the flint tools with which the savages removed the flesh from the surface of the bone, but some are indubitably patterns of the fancy, scratched in that *dolce far niente* mood in which a savage digests his dinner. Some are actually cut into imitative shapes. The most interesting specimens of Stone-age art which I have ever seen are those of roots preserved in the cabinet of M. Boucher des Perthes at Abbeville.* They were found in the peat-bogs of the river-bottom, and are therefore of less extreme antiquity than the flint instruments of the diluvium. But they are old enough, heaven knows! and very curious. They are in the form sometimes of men, with straddling legs and arms; sometimes of ducks, or snakes, or frogs. But whatever shape it may be, some artificial addition has been made to it, by the joking savage, to increase its likeliness, and to express his appreciation of its oddity, or perhaps we ought to add, in his eyes, to its beauty. For when we see how evidently, how inexpressibly lovely, to the enthusiastic little mother-heart of one of our baby daughters, her dirty, black, old, hideous doll can be, we may believe that, to the art sentiment just sown and hardly yet sprouting in those aboriginal savage souls, a black forked effigy of humanity, with the addition of a cut with a flint knife for a mouth, and a peck on each side of its head for two eyes, would represent Venus the goddess of loveliness, if not indeed Jupiter the awful thunderer. There is a good deal of accounting for tastes—when we consider circumstances.

The next stage in sculpture was, probably, imitations in stone of the marks of wet feet and hands. These would first be made at river fordings, and afterwards on the tops of look-out mountains. Such sculpturings are described in books of travels all over the world. The savage crosses a stream by swimming, and dries his dripping body on some sun-lit rock. Then he waits for his companions, or for his prey, or for his enemy. Meanwhile he pecks away at one of the damp footsteps on the rock. Others notice what he has left undone, and finish it. The footprint becomes a permanent landmark. Some battle there in

* The sculptured bones of the caves of the Dordogne had not been found when this was written.

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subsequent days shall make it famous. Some deified hero shall be propitiated there by sacrifices. The footprint becomes a symbol of worship. You have all heard of the two footprints sculptured on the summit of Mount Olivet, and worshipped by pilgrims, as the marks left when Jesus sprang into the sky at his ascension. There is another footprint of Jesus preserved on a stone in the Mosque of Omar, at the extremity of the eastern aisle.* At Poitiers, in France, the traveller may see two footprints of the Lord, upon a slab enshrined in the south wall of the church of St Radigonde, made when he stood before her to inform her of her coming martyrdom.

The prints of the two feet of Ishmael are preserved on a stone in the temple of Mecca, which tradition says was the threshold of the palace of his father-in-law, the king of the Dhorhamides.† Others say that they are the prints of his father Abraham's feet, when Ishmael's termagant wife drove the old patriarch away from the threshold of her husband's house.

On the top of the highest mountain in Ceylon are the prints of Adam's feet. There are two immense footprints, 200 feet apart, on the rocks of Mägdesprung, a village in the Hartz mountains of Germany, which tradition says were made when a huge giantess leaped down from the clouds to save one of her beautiful maidens from the violence of a baron of the olden times.‡ The holiest object in the great temple of Burmah is the so-called footprint of Gaudama, seven feet long, divided into compartments, and sculptured in an extraordinary manner in the fashion of an astrological charm.

My purpose is not to lead you into the dark chambers of heathen imagery. I might not be able to explain at all to your satisfaction this disposition of the human race to worship the human foot and everything belonging to it, though I have my theory for it. We will stick to our subject, which is sculpture and its origin.

But I wish I could transport this audience to a mountain top, where I stood one day last spring, and show them a specimen of savage sculpture of the most primeval type.

* F. 33, 21, 4 index.

† Weil's Legends of Mohammed, 36, 23 h. ‡ 32, 2.

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It is a broad-backed, flat-topped mountain in western Pennsylvania, the westernmost of those which compose the Alleghanies. It is cleft from summit to base, a depth of 1300 feet, by a narrow gorge through which flows, roaring on towards the west to join the Ohio, one of the fairest rivers in the world, the Youghioghany. On the southern brow of this gorge, looking down fearfully into it, and also looking broadly out over all the western country, with a sweep of horizon taking in the blue distance of the Pittsburg hills, there is a table of bare sandstone rock. The people call it, as the Indians did before them, the Cows' rock. The road runs over it; and the tracks of wheels are scratched upon it. But ages before old Heckewelder's daughter was born, the first white child west of the Alleghany mountains, the Indian's trail went over this same rock. And here the red men, weary with the hot and long ascent, rested themselves; pitched pebbles down into the abyss of the river gorge, and looked out over the illimitable forests of Westmoreland county, to catch the distant smoke of the fires of their tribes. And while they sat, they cut those fanciful figures in the face of the rock which still remain, half obliterated by the wheels of the white man's waggons, but still kept clean by the rains. There you may see the cloven foot of cows or buffalo, and human feet, and three-toed marks of birds, like Deane's and Hitchcock's ornothichnites, and waving snakes, and others not so easy to decipher. I went to see the place, hoping that the imagination of the farmers had misled them, and that the works would prove to be the casts of fossils; but there was no mistaking their artificial character.*

In the same way the human hand is stamped and cut upon a thousand cliffs, and on the walls of temples. It was a favourite subject of art in Central America. You know it was used by the Roman legions as a sacred standard.

* Similar, more numerous, and more perfectly executed rock sculpturings, covering the stoss sides and backs of some granite islets, in the bed of the Susquehanna river, at Safe Harbour, below Columbia, in Pennsylvania, have been photographed and described, from plaster casts taken of them by Prof. Thomas Porter, the president, and other members of the Linnean Society, at Lancaster, and published recently in the Proceedings of the American Philosophical Society at Philadelphia.

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The two hands of man were his two great gods, his providers, his defenders. In the Thracian mythology they were the Cabiri, the great gods workers, and their children were the ten dactyloi, or fingers. Then, when men in old times grew tired of worshipping their own hands, they began to worship the uplifted hand of the bard-priest blessing them, and of the bard-baron crushing them. Afterwards its beauty seized upon the æsthetic sense of the artist, and men drew it and sculptured it for its own sake, rather than for what it had accomplished. When the pope sent a commission to Michael Angelo to examine his ability, he refused to be examined; but, seizing a piece of chalk, he drew a human hand so boldly and with such grace and such expression that no further question could be asked; and so he built St Peter's.* Finally science drew the hand, and proved by it, in a Bridgewater Treatise, that there must be an all-wise and beneficent Creator.

Such is the history of all the fine arts.—There is an insensible graduation of art for imitation into art for ornament. The tools of one age become the amulets of a succeeding age; as in the case of the Swiss flints. The phallus found in the Poitou cave was either an idol or an amulet. The ladies of Rome wore such as breastpins in the Augustan age. The miniature hand lies as a paperweight on modern tables, and as a tablet on the wristlace of our ladies. The selection of odd forms of roots by the people of the Abbeville bogs is paralleled by the selection of bizarre laurel-root walking-sticks by modern young men. And the same love of the rare and beautiful, which sets so high a value on the emerald and diamond now, caused the Stone age savage to string together round his neck the floating bits of amber which he saw, and to perforate and hang about his loins beautiful small shells. The same feelings induced the Druid warrior to wrap a golden torque around his arm, that induces an underbred American to set three California nuggets in his shirtstuds.† The perpetual search for proper and perfect slingstones must have cultivated to the highest pitch, and at the earliest periods, man's faculty for form and colour in the materials of art.

* See the story in detail, in Grimm's Life of Michael Angelo, Bunnet's translation, vol. i. pp. 158—160. (Littell and Brown, Boston, 1865.)

† For the early use of gold see Appendix to Lecture VIII.

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Some of the works of savages strike us with astonishment, such as the perforation of the precious stones by the inhabitants of Central America. But we must remember that the savage was never in a hurry; time was not money then; and what was made was kept and valued long. The ivory work of the Chinese is quite as wonderful.

But why should we waste time with the earlier stages of man's effort to express his appreciation of the forms of nature? We have in architecture the summation of all his efforts; the trial of his matured powers; the efflorescence not only of his taste for form and colour, but of his sense of grandeur and sublimity, of his ideas of the invisible powers by which he is surrounded, and of his hopes of future happiness.

I wish to confine this lecture chiefly to a discussion of the rise and meaning of ancient architecture. And I shall use the term architecture in its most ancient and not in its more modern sense. No two meanings attached to the same word could well be more different. To the imagination of a man of the 19th century the word architecture conjures up a splendid vista of roofs and towers, with battlements or spires, castles and churches, palaces and stores with marble fronts and decorated windows from the pavement to the eve; parliament houses and city halls, in parks laid out for public recreation; hotels of a thousand separate rooms; vast railway stations, each blocking up the end of some wide avenue, one exit of the city, with long hanging vaults of wood and iron, under which interminable trains of cars may load and unload thousands of travellers; factories, mountainous piles of furnace-stack and hollow archways, girt with gigantic flues and capped with curious brickwork, black iron cylinders vomiting fire, and taller chimneys smoking in the upper air; bridges like spider-webs, and viaducts with wonderful arcades, spanning the streams; observatories crowned with domes like eastern mosques; theatres and halls for music, with organs, seeming like the slumbering winds of Eolus, waiting to rouse the world; great, many-storied public schools, each with its tide of life ebbing and flowing with tumultuous regularity four times each day, as if they were the ventricles of a great nation's heart: all these and innumerable private residences and villas urban and suburban, in

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streets, on hill-tops, and beside the shore, or buried in sweet vales; all these combine to make up architecture now.

In ancient times it was not so. The so-called ancients, Greeks and Romans of the times of Christ, only 2000 years ago, they had their architects for triumphal arches, aqueducts, bridges, forts and palaces, as well as for religious shrines. Even the Assyrians and Babylonians, of an age a thousand years earlier, built palaces as well as temples; if their palaces were not indeed their only temples, as their kings were named after and worshipped for their gods. But in the real old ancient times, preceding all those really modern or grandly mediæval histories, I mean the times of ancient Egypt, the times when British Stonehenge, and the Armorican Carnak, and the North African cromlechs, and the Cyclopean walls of Italy and Greece were built; in those old days there was nothing but religious architecture. The people lived in tents or cottages. Their kings were merely chieftains, heads of tribes, living among their people like Arab sheiks, or like the kings in Western Africa. How many ages from the beginning passed before the building of temples began, we cannot know. All before the rise of architecture was an age of unconscious art, mixed with uncertain superstitions; an age of fetichism, with its vulgar sorceries, like those which form the sole religious ceremonies of our Esquimaux; and with its rude stone idols, wooden painted posts, sacred trees, haunted mounds, and amulets.

The original root of all architecture can be found in the sepulchral mound. The Druid barrow or the Tartar tumulus, became first the pyramid, then the propylon of the Egyptian temple, then the pagoda of India and China, and finally the Parthenon and Pantheon of Greece and Italy. The pyramids of Nubia and Egypt, with one exception, and that one not undisputed, are undoubtedly the Mausolea of the early Pharaohs; while all the other primeval Egyptian monuments are private tombs. The earlier Egyptian temples were avowedly erected in honour of deceased monarchs by their sons. The custom was transplanted from the soil of the valley of the Nile to all surrounding lands. The Mausoleum at Halicarnassus in Asia Minor was one of the wonders of the world. No trace of it re-

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mains. But the vast tomb of Massinissa in Numidia, 200 yards in diameter, and the tomb of Hadrian at Rome, still challenge the admiration of mankind. But why select examples here and there, when the grave-mounds of forgotten princes covered the entire surface of the earth, and furnish to our antiquaries their oldest and most precious curiosities. Nor is it needful to go back to the youthful days of Mitzraim to study fragments which escaped the iconoclastic hammer of Cambyses only to be submerged by the Libyan or Arabian sands. The greatest living empire of the world is to-day practising and illustrating throughout its 16 provinces, each one a mighty kingdom in itself, that architecture of ancestral worship which, having antedated, will survive and swallow up all other works of men. The tombs of the Ming dynasty near Pekin show that the self-same sentiments and ideas continue to rule the human heart and direct the artist's hand which called into magnificent existence five thousand years ago the Colossi of Benihassan and the Necropolis of Thebes. A thousand things in Chinese life impress the traveller strangely with the devotion of the entire nation to these tender and reverential tastes and feelings for the dead. To the father nothing is refused. The most acceptable present that a son can make him is a coffin. He knows that death will be no bar to his advancement in honours, for the merit of his child will illuminate his name. Nobility is not prospective but retrospective in the Central kingdom. The hero's deeds, the sage's wisdom, the statesman's success ennobles not his descendants but his ancestry. The degenerate barbarism of Europe has substituted the sordid interests of property for gratitude and piety.

Ancestral worship, or the homage which the living offer to the dead, is not only the most extensive, but the only universal form of religion upon the earth, and the oldest of which any traces remain in early history. It was natural, therefore, that the first tomb should be the first temple, and *vice versâ*. That desire to live which was given to mankind in common with the other animals, as a safeguard to his life, contained within it germs of thought and sentiment, which were in process of time developed into a thirst for immortality. This caused the living to erect their own tombs; and civilization has done little to change the

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ancient custom. True, circumstances may render individuals reckless; and, if long enough adverse and charged with sufficient misery, may even obliterate from families and tribes the acquired instinct of ancestral worship. Livingstone represents the Makololo as totally careless about the bodies of their dead, and hostile to every remembrance of their past existence.* Yet such are rare exceptions to the general rule.

In ancient days the father was not only the giver of life, but the lawgiver who could order it away. Abraham sacrificing Isaac to Jehovah, or sending away Ishmael and his mother into the desert; Jephthah paroling his daughter for a month; the king of Moab slaying his first-born on the city wall in sight of the hosts of Israel:—we read these stories so often that they cease to make their natural impression on us. The ancient father was in fact both family priest and king; and when he died he became the family deity. The chief of a tribe was but the greater father of a larger family; and when he died a grander fane arose in homage of his power and virtues. I am not one of those who entertain the theory, that all the deities of ancient times were monarchs, or benefactors, or emigrating chieftains deified. No! the worship of a man ceased with the generation who succeeded him; as only one pope at a time can occupy the sarcophagus over the doorway in St Peter's. But nevertheless there is no denying or mistaking the combined action of the two causes which I have just named upon the rise of architecture, viz. the man's own desire for an eternal mansion, and the honours which his children voted him.

The most ancient specimens of architecture whose date we know, are certain tombs of Memphis, which M. Mariette has recently uncovered from the sands of the great plain, on the edge of which stand their next descendants in architectural age, the pyramids. These tombs were built originally, like the houses of a city, in rows, separated by narrow streets, some of which are cul-de-sacs, or courts. The tombs themselves have all one form, that of a small pylon, or truncated pyramid; the façade, or front towards

* See Livingstone's curious account of 'hiding the dead' on the Zambesi.

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the street, decorated with long prismatic mouldings, terminate in lotus leaves tied together by the peduncles. This is M. Rénan's description: and he refers for illustration to Lepsius' Denkmaeler aus Ægypten und Æthiopien, prem. part. pl 25, 26. You will hereafter see the importance of this ornamentation to a correct theory of architecture; but at present let me continue the description of these interesting monuments. The door of each tomb is very narrow, and never in the centre of the front. Over it is cut the hieroglyphic guitar, a cylindrical drum or tabret, carrying the name of the dead. Here he lives for evermore, always at home. It is his 'everlasting home,' the very term the old Egyptians used to designate a tomb. And the interior arrangement agreed with this idea. It was arranged for the reception of his surviving friends on certain days of the year. Therefore in the oldest times—at the extreme dawn of history—the first—absolutely the first scene which is presented to our eyes, is precisely that which the modern traveller beholds when he visits on All Souls' Day the Parisian cemetery of Père la Chaise, or the tombs of the Ming dynasty near Pekin. Ancestral worship was the first and will be the last religion of mankind.

Entering now one of these old Memphite tombs one sees engraved upon the walls the master of the house in the bosom of his family; his wife, his children, his servants, his scribes, his household furniture, around him. His own portrait in bas-relief occupies the post of honour, and is commonly repeated in several places; while a large stele, or obelisk-like pyramid, gives his titles and sometimes his biography, his characteristic traits, even his infirmities, to ensure the continuance of his personality. How strong must have been the lust for immortality which ruled the breasts of those old people! I mentioned in a former lecture with what detail the agricultural habits and manners, tools and animals, of this primitive Egyptian race was given in these family picture-galleries; and how no trace of war or of religion is apparent in them.

This we must dwell on here a little; not to discuss the origin of the religious sentiment or its realization in worship, to which I shall devote a future lecture; but for the

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bearing of the fact upon the theory of architecture. In these tombs we find, I say, no trace of those chapters of the ritual of the dead, which, under subsequent dynasties of kings and priests in Egypt, came at last to constitute the obligatory ornamentation of all tombs.* In the ancienter times of the Memphite tomb-builders, the deity seems to have had neither name nor image. The dog Anubis, on whom the trinitarian spirit of a later date bestowed three heads, the Cerberus of Greek mythology, appears indeed upon the walls as the guardian or watch-dog of the tomb. But where is Osiris—that special funeral god of the later dynasties? For these more ancient Memphite 'everlasting homes,' he has as yet no existence. They are in no respects funereal chapels consecrated to a divinity. *Death* is the only deity acknowledged here. We are in the rear of all mythologies; behind the curtain the drama of religion has not yet commenced. We are still in the primeval age of man's existence upon earth, before the birth of kingdoms and priesthoods, as we know those things; yet also, at the end of that great age, just when it is about to breed another age, and pass, itself, into its 'everlasting home.'

But we have here true architecture and the fine arts

* 'The tombs of Memphis are all dated in the six first dynasties; and without this they would still indicate their relative age by their style and the order of their ideas. Compare them with the grottoes of Beni Haman (2500 B.C.) where the ideas are the same, death the only deity of an eternal home, a grand, gay chamber alive with pictures, but with neither superstitions nor terrors. Then compare them with the tombs of Biban-el-molouk, near Thebes (1500 B.C.), and see the sudden and complete change! A Christian and a pagan tomb could not more differ. The dead is no longer at home; a pantheon of gods have usurped his place; images of Osiris, and chapters of the ritual cover the walls; graved with a care as if the world must read them, and yet shut up in everlasting darkness, but supernaturally powerful. Horrible fictions, the foolishest vagaries of the human brain. The priest has got the better of the situation; these death-trials are good alms for him, he can abridge the poor soul's torments. What a nightmare is this tomb of Sethos! How far we have got from the primeval faith in death and survivance after it, without the ceremonial of the priest, or long list of names divine, ending in sordid superstition. One of our Gothic cathedrals differs less from one of the tombs on the Appian Way than do the old tombs of Sakkara from those which fill the strange valley of Biban-el-molouk.' (Rénan.)

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already born; nay, more, already perfect in one of their careers.

Nothing, in fact, would so thoroughly dispel the scepticism of religious people respecting the antiquity of mankind as a good examination of these monuments. They say themselves that they belong to the first dynasties of Egypt, and yet their construction is as perfectly beautiful as if they bore over their doors names of the monarchs of the 18th or 22nd dynasties, 2000 years later of date. What is so astonishing, so bewildering, is this: that art and architecture, *when we see it first*, is in its full maturity. The painting, carving, and building-arts (to judge by these Memphite tombs) have had apparently no infancy. And it is only by turning from Egypt to other lands, and from these wonderful treasures preserved beneath the sand, to the cyclopean walls, to the circles of standing stones, and to the Druid barrows, that we are reminded of those vast stretches of time before Memphis and its people had existence, ages of night and wandering for races of mankind, whose only monuments were some stray boulder poised upon a hill, or some smooth rock beside a stream, on which they could engrave a few rude effigies;—races which have all perished, without one name engraved in legible characters; without one shrine to keep alive the remembrance of a single deity.

But were we to dogmatise in this fashion about the early and sudden blooming out of Egyptian art, or Chinese civilization, as if they were created perfect, and had no beginning, simply because we can find no records of such beginning, we must forget that a record is impossible without a scribe to make it. Mankind without arts have no means of recording the history of their arts. Art is a self-recording instrument indeed, but not until it is itself completed. And when we examine the Egyptian record a little closer, we can perceive in it a confession of improvement and progress, which relieves us of historical embarrassment. If Mariette can say of the fourth dynasty that its opening reigns yield us prodigies of an unexampled civilization, unexampled at that moment in the world, a society definitely constituted, a development of art at a height hardly to be topped by the most brilliant epochs afterwards, and an architecture elegant, he must add that

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all this marks a sudden and extraordinary movement, the cause of which is hidden from our research; and we must remember that three dynasties had preceded, numbering as many centuries as have elapsed between the Norman conquest and the present day; time enough, one would imagine, for the growth of all the arts and all the sciences.

It is admirable to see with what fidelity the builders of the Memphite tombs did all their work. It reminds one of the enthusiasm of the builders of the Middle Ages. And yet M. Mariette has distinguished in the early tombs of Egypt three classes. The most ancient, like that of Amten, exhibit art and literature in process of formation, the hieroglyphs widely separated (clair-semé) and in relief. Rude forms abound. The statues are thick and short, with all their anatomical details exaggerated. The second class, the best example of which is Ti's tomb at Saqqarah, are better placed, with hieroglyphs less boldly striking, and more harmoniously grouped, making the text more legible. The alphabeti element begins little by little to substitute itself for the syllabic, which forms so large a part of the older legends. Ascending genealogies become rare. The formulæ of invocation are addressed to Anubis alone. The third class, contemporary with the 6th dynasty, begin to show the name of Osiris, and the formula of justification, in text more lengthened out, with beautiful forms of prayer, and biographical recitals, to vary a little the monotony of representation. In these, and in the tombs of the second class of the time of Ti, are found those beautiful and smoothly worked-out statues, with visage round and smiling mouth, fine nose, large shoulders, and stout limbs, which form so numerous and precious a collection in the Boulaq Museum. And in these tombs are also found those enormous monolithic *steles* cut into the form of a façade, of which the Museum has so rich a collection also. These are, then, the three stages of the oldest Egyptian art. Then came a long break, perhaps the Dark Ages of the ancient empire. We pass down through five more centuries to the 11th dynasty, when a Renaissance appears, with Isis for its deity, and marks which cut it off from any direct inheritance from the art that had preceded it by so long an interval. The *steles*, formerly square at top, have

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now become rounded. The hieroglyphics have a particular awkwardness resembling not at all those of the tombs of the 3rd dynasty. The sarcophagi are also different, and colours are in vogue. Then comes the splendid age of obelisks, colossal statues, grand grotto-temples, and all that make the borders of the Nile and Thebes the wonder of the world.

I once enjoyed the rare opportunity of getting upon the roof of the Sainte Chapelle in Paris, in company of the architect to whom was intrusted the superintendence of its restoration, under Louis Philipe. After I had feasted my eyes upon that glorious panorama—which I think is finer from this point of view than from the top of Notre Dame—I occupied myself with the bits of carving which surround the pinnacles of the buttresses, and which are entirely invisible to persons in the street,—hundreds of leaves and flowers, and delicate morsels of fretwork, which no eye had seen for centuries, even since the stone-cutters had hoisted the blocks unchiselled to their places, and yet as nicely wrought as if they were intended for the doorway in the porch. And I could not help asking myself the question, When will our architects get such a conscience as those old masons had?* And I wondered also when the time would come for a public taste impatient of our meretricious sham shop-fronts on Chesnut-street or Broadway, showing their ragged edges and unfinished cornice-ends, and soft brick-side walls, up and down the street as shamelessly as harlots in the evening flaunt their tawdry.

The old Memphite tombs were built to last, and to last beautiful. They were to be *homes* always. They bore no resemblance at all to our family tombs, crowded with coffins, hideous with mildew and fungous vegetation, generating horrors of the imagination to be surpassed only by those which breed within the modern so-called Christian doctrine of eternal damnation. There is nothing to suggest the Columbaria, or pigeon-cote burial-places, of the Hebrews, Phœnicians, and Christians of the Roman day; nor those vast catacombs in which whole congregations of believers in a future life were laid away to sleep together,

* See Rénan's beautiful description of this perfect conscientious art, p. 673 (Revue des Deux Mondes, 1st April, 1865).

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until the archangel's trump should wake them up together for the judgment-day.

The Egyptian farmer's soul lived all alone in his 'eternal mansion.' Each tomb was individual. Except in some few cases, even the wife had no admission with her husband to it. He was satisfied with her picture, among those of all his other domestic animals. Except on the solemn anniversary, the narrow door was shut, and darkness obliterated the pictures, except to the departed ghost. He was supposed to regale himself with the offered fruits and cooked food which his friends left in his chamber. Some of these touching proofs that love and veneration have always swelled the human bosom have remained there untouched all those thousands of years, until M. Mariette opened once more the doors.

But the prime point for our reflection is the fact that there is nothing of the tomb about these tombs; they are houses—homes. They feared but one thing—disturbance. With what horror must the ejection from his tomb have been contemplated by the old man of the Nile! The possible loss of his hereditary lands could not more shock an English nobleman. To be turned out and sent adrift, homeless for ever, a poor ghost unable to build but once and never more! Imagine his feelings in view of such an irremediable and infinite calamity! I believe that these Egyptian sentiments, entertained as they were by all the early races of mankind, were the originals of all those superstitions of Hades, and haunted places, and uneasy spirits, which exist to-day. How different the dying Christian's thoughts! To him there is no isolation in the tomb. He sees heaven opened, and flies to join the great congregation of the first-born in the kingdom of the Lord who rules the heavens and the earth under the new dispensation. And as the old Egyptians had the idea of immortality, so even the cave-dwellers of the south of France must have been led by it to make their burnt-offerings to the dead, as M. Lartet has shown. The peculiarity of Christianity consists in the fact that it was both *life* and immortality which were brought to light by Jesus Christ.

The care with which the body of the dead was preserved in a sarcophagus,* and the care with which the sarco-

* The sarcophagus is an immense cube of granite or white marble, the

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phagus was concealed in a chamber of its own nearly 100 feet underground, approached by a well sunk in the thickest part of the masonry, and then by a horizontal gallery, so arranged as to make it extremely difficult to discover the whereabouts of the sarcophagus—all show how dreadful an idea the profanation or disturbance of his body must have been to the living Egyptian.* To derange his repose was to compromise his eternal salvation. How his body was to share in his soul's immortality, perhaps, was never a clearly formulated dogma in the Egyptian creed, if there was such a creed. But mummification became afterwards one of the fine arts, and combined sculpture and painting with all the most shameless tricks both of priestcraft and of trade. It would be a perfect farce to tell you of the shrewd devices of the Egyptian undertakers in a later age, to say nothing of the grim mistakes which have been made in lecture-rooms in this country. I remember when a mummy-case, purporting to be that of a Pharaoh's daughter, was solemnly opened and unwrapped before a crowded audience; I think Mr Agassiz was present and took part in the proceedings; the case contained the body of a boy, and nobody has ever been able to explain the misadventure, except on general principles—that the Egyptian undertakers were great rascals.

In the earliest times there were also images made of the deceased, but they were exquisitely well done, and the sole intention seems to have been to preserve the personal identity of the departed, to make sure that his ownership of his own 'everlasting home' could always be identified, that no false claimant might ever eject him from it. These images are now found concealed in little wells in the masonry of the tomb. The number of them already collected is

walls of which are sometimes decorated with prism-shaped reeds (rainures), and other ornaments analogous to those of the façade of the tomb.

* The same spirit presides over the queer construction of the pyramids. Each was the inaccessible, eternal home of a king. Their entrances were never in the middle of a side, and carefully sealed up. The galleries within were filled with rocks, from the tumbling in of the roofs, after accomplishing which the workmen escaped by curiously constructed shafts of exit. These precautions were so successful that the chamber of Cheops was not reached by any explorer until the days of Caliph Mamoud, 5000 years and more after it was built. (Rénan.)

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very great.* Some are of wood, some of granite, some of marble. One, to be seen in the Museum of Charles X., represents a scribe, executed with the minute finesse of a

* Museum of Boulaq. Some are in the Louvre. 'It is ugly, common, vulgar assuredly, but nothing ever came up nearer to the intention of the maker. It is an unequalled prodigy, this wooden statue of the Museum of Boulaq, to which the fellahs gave unanimously, on its discovery, the name of Scheickh-el-bilad, "The Village Sheik." It is the statue of a certain Phtah-sé, cousin to the king. His wife's statue was found near it. The expression of naïf contentment spreading itself over the smiling figures of these two good folks is plain enough to see. One would call them two Dutchmen of the times of Louis XIV. One may not doubt, looking at these statues, that before the period of royal despotism and sumptuousness, Egypt had an epoch of patriarchal liberty. The pompous official art of the Thouthmes and the Rameses did not lower itself to represent such *bonhommie* any more than the artists of Versailles bent down their dignities to paint "Magots" (boobies, puppies). In fact these two astonishing *morceaux* are of the 4th or 5th dynasty. Will you say that here we have primitive art starting on its career with such minutiæ? Consider first, I pray you, that Egyptian art was not at its *début* but in its perfection then. What is most extraordinary in this civilization is, that it had no infancy, We seek in vain for an archäic period of Egyptian art. In architecture that is easy enough to understand, for it finds the means of accomplishing its desires commonly much sooner than the plaster arts can do it. But for sculpture to divest itself of all rudeness and awkwardness centuries are requisite. Greece, Italy of the middle ages, prove it. But such a statue as that of Chéphren, of which I shall soon speak, and all the statues of the ancient empire, are not at all in the style of a middle age. They have a definite style of their own. Viewed as to the measure of the nation's genius, they could not be done better. Egypt in this, as in so many other things, contradicts the laws we assign to the Indo-Germanic and Shemitic races. She begins her career, not in myth, in heroism, in barbarism. She is a China, born mature, almost decrepit, having always had that air at once of infamy and age which her monuments and her history reveal. The divine youth of the Yavanas (Ionians, Yavanasdones, the youths, Juvenes) was ever unknown to her. That she started with realism, with platitude, does not amaze me more than that she started with good sense, good domestic economy, the right sense of worthy farmers, knowing exactly the number of their geese and asses. We are not here on the soil of Homer and Phidias; we are in the land of clear and rapid conscience, but limited and stationary. Solon's priest of Sais thought himself sarcastic when he said, "You Greeks are babies; there are none old among you; you are all young in spirit:" but it was the profound error of a narrow-minded conservative, proud of that which marked his own inferiority. It is permitted man not to be always young, but it is needful to have been young once. These intelligent guardians of dead letters could not see what made the force and beauty of Greece, as many a heavy spirit of our days thinks that he has exhausted language against France when he has affixed to her name the epithet of revolutionary.'—Rénan.

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perfect realism, which refers us to more ancient times, when savages criticised the forms of nature with no æsthetic sentiment, but with the interest of life and death. Hence we have in these images an ethnographic precision, like that of Chinese or any other cultivated but unideal art.

Let us reflect a moment. Wherein does the savage of primeval times most differ from the philosophic citizen of modern Boston? Is it not in this—that life, and nature, and art, and thought were to the savage man all in detail; but to the civilized are in the general? As the savage spent his time alone, spearing one fish, luring one bird, trapping one animal, whittling out one arrow at a time, measuring the ground with single paces, skulking from tree to tree, and stopping behind each—so all natural and primitive art must be detailed, precise, and characteristic of single individual forms and movements. We, on the contrary, we civilized people, live in crowds. Our cities are aggregates of houses, even with walls and roofs in common. Our furniture is made by machinery, and shovelled into our life by the million. We have lost all idea of distance in miles and furlongs, like the Irish woman from Boston, who refused to believe that she had arrived at the West Newton station-platform, protesting that "if she'd ha' known it wasn't any further than that she'd ha' walked." All our thinking now is done in generals. Science is merely generalization. Hence our *art* has become *abstract* also. The feeble attempts of the Pre-Raphaelites only show how utterly disagreeable to the genius of our day would be a return to the individualization and characteristic detailed particularity of the first stage of Egyptian art; when every man built his own tomb, and every image in it was an exact, unflattering, conscientious portrait of himself.

One more reflection before we proceed. The science of the fine arts is the science of beauty, taste, an appreciation of the fitness of things, harmony, proportion, symmetry or rhyme, and alliteration or rhythm,—that law of all laws in the Cosmos, the law of pulsation, vibration, or paroxysmal repetition. Now, why do we never expect taste from a savage; and why do we count taste among the prime *criteria* of good-breeding? Ethnologists have laid down a rule for themselves in estimating the relative antiquity of

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their discoveries. If the objects which they find are polished, they consider them comparatively recent; if ruder, more ancient; if very rude, primeval. But what right have they to establish such a canon? Are there not bad masons a plenty, laying up tumble-down walls to-day; and miserable sculptors cutting thousands of horrible tombstones for Mount Auburn and Laurel Hill, which they expect the world to call fine monuments? What is the ground for this distinction between rude and polished art? I will tell you. The savage has bad taste, because taste is that faculty which deals with the true relationships of things. Knowledge, therefore, cultivates Taste; and the savage is ignorant. Not the knowledge of things in detail, but of things in their relationships. Nature deals in what we call delicate touches, and these require sharp eyes to see—loving, patient, educated eyes. This is why sorrow refines the soul. Sorrow is ejection from self into the world's wretchedness; the hurling of the soul from its vantage tower of isolation, down upon the hard pavements and among the hostile crowds below. Sorrow, disaster, teaches men strange bed-fellows, enlarges their comprehension of the worlds in which they live, and so refines them. But even this source of refinement the savage has not; for his sorrows are solitary; his woes annihilate him like thunderbolts; he perishes too easily; there are no ameliorations in his lot; his taste continues hard, for he has nothing about him but the raw stuff of nature, inexorably cruel to him, playing with him as a cat plays with a mouse, and only now and then grimly laughing at him through some odd antic or queer shape of the animal or vegetable kingdom. His imitations, therefore, of nature must be gross, rude, and individual. He has had neither eyes to discover, nor tools to imitate, those combinations of force and form which constitute nature; still less the taste to feel those delicate ideals of all forms, those Ariels of the tempest of this earth-life, floating high before the soul, and beautiful, and musical as beautiful. *These* are the spirits of *our* architecture. These were the genii of Phidias and Praxiteles, the Prosperos of that magic Isle of Art, at whose command sprang up the divine porticoes of the Parthenon—that Miranda of the Island; and the three thousand statues of the Olympium at Elis—that synod of all man's exquisite

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imaginations, that symposium of all forms of strength and beauty realized in marble, ivory, and gold.

But even Greece was not well bred enough to comprehend the grander combinations of a later day. It needed the marriage of the Classic and Teutonic races to produce the Gothic cathedral. And when the time was fully come, and that wondrous world of reeded piers, and skyey arches, buttresses and pinnacles, towers and spires, in combination, like the solar system, or the framework of the Christian church, rose above the grave of Ambrose, bishop of Milan, see how those three thousand deities of ancient Greece rose too from their old seats in Elis, and flew to perch upon its pinnacles. Painters came journeying from every side of Christendom to hang their histories of angels, saints, and martyrs on its piers. Musicians choired for ever in its chapels, as naturally as nightingales collect among the copses of the Rhine. Kings, dukes, and merchants built between its buttresses their tombs, or decorated shrines to their tutelary saints with offerings of every precious stone and work of art, whatever they could find, or buy, or steal, to save their wretched souls. Emperors hung up along its vaulting naves the tattered ensigns of their vanquished enemies. Pilgrims, returned from Holy Land, and poor pale women, convalescing from some desperate malady, placed there their shell and scrip, or votive wax light, or bouquet of artificial flowers. In times of war and pestilence the multitude from the surrounding country rushed to the cathedral church as their sure ark of safety. God shut them in. The deluge might rage outside; but they were safe. They called it therefore going into the temple Nave, from *navis*, the Latin word for ship. The old Greeks had the same name for a temple, Naos, because *naus* was the Greek for ship. Architecture was to the ancients, not the building of arches, but of arks, into which the suffering crowds might be led when troubles rose upon the earth and men despaired of living.

Around the cathedral the whole religious hierarchy organized itself. On one side stands the baptistry, by which the ark is entered, spiritually. On the other stands the chapter-house, where laws are made to govern the church and regulate its services. A covered way in one direction leads to the archbishop's palace, full of noble

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guests from every land. In the other direction stretch the cloisters of recluses, automata, by which the ceremonial goes on with all the rhythmical steadiness of planetary motion; or learned men, who keep alive the old traditions of it; or charitable men, busy about the hospitals and at bedsides, almoners of the Church's charities, or preachers to the poor and hard-worked million. Then in its vaults we have more relationships—these with the past; sarcophagi of founders, builders, restorers, rulers of the Church; the relics of the saints; caskets of precious jewels; boxes of gold and silver plate, rich vestments, wealth bequeathed for the care of its roof and walls, and all its numerous uses. If we ascend its staircase we may find within its roof a little village of carpenters, masons, plumbers and glaziers, always occupied in keeping the vast edifice in good repair, —for it is mortal, like other things in this world, and if unwatched, would fall piecemeal, and crumble (like some tall cliff or mountain cedar) into the dust again from which it rose. Happy the ancient Memphite tombs, over whom the sonsy sands were spread, like a bed of snow in winter, to protect the grain for spring.

I have given you this picture of the architecture of what we misname 'the Middle Ages' (but which are, as to the whole world-history of man, the modern times in which we actually live), in order to show that the development of art consists in these complex relationships; that a cathedral temple has grown up, like a mountain mass, by the addition of layer upon layer, formation upon formation, all different, and yet closely related; by successive additions of great ideas,—ideas bred of civilization, of many superimposed civilizations; ideas produced by the conflux of human interests; correlated ideas of state policy, religious sentiment, and family interests. And as it required the varied experiences of many ages and many races to combine in one great monument the parts of a cathedral, so it requires in the spectator a life rich in these ideas to appreciate and admire such a monument.

The traveller must have travelled much, read much, been greatly conversant with human things; swept with his own experience through a wide circle of adventures; grasped the meanings of many social and political phenomena, and undergone great revolutions in his own soul,—

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or he will walk through the solemn aisles as a brute beast grazes heedlessly among the grandest and most beautiful scenes in nature. If he be a narrow bigot, he will look on all the symbolic devices around him as a vulgar raree-show, and scoff at the great temple as a house of idols. If he be a petty shopman, he will merely price in his own sordid mind the money value of the golden censer and the marble tomb. If he be a mere political economist he will murmur at the vast and useless expense of walls and arches, towers and pinnacles, as Judas Iscariot did of old, when the woman broke her alabaster box of precious ointment to pour its contents upon Jesus' feet. If he be a mere statesman and a democrat, he will bluster over the despotism of priests, the selfish pride of princes, and the beggarly self-indulgence of the monastic orders. If he be a mere painter or sculptor, uninstructed in the greatest thoughts of all ages, he will occupy his narrowed taste in paltry criticisms upon this or the other work of art; carp at the architrave mouldings, complain of the want of symmetry between the more ancient Norman nave and the more modern pointed Gothic choir, or draw detracting comparisons between the façade of this and of some other temple which he fancies rather. None but a noble mind, enlarged by the influx of all the past, can comprehend a great cathedral, and the genius of its architects.

A savage cannot do this. He is stupified by the incomprehensible. The cockney Englishman,—the raw American grown suddenly rich by some infernal speculation,—such men tramp through Europe like the Goths and Vandals from the forests of ancient Germany. They read no story in its monuments. They sail up the Nile, and although its granite walls are covered with writings, these are blank hieroglyphics to such eyes. It is not seeing much that gives man taste or knowledge: it is seeing the relationships of things. Better see a few fine specimens and analyze and comprehend their relationships, than see all things with an unenlightened, unreflecting eye. Napoleon said it in his famous sentence: 'Soldiers! forty centuries look down on you from the pyramids.' The Anglo-Saxon calls that bombast. No; none but a Napoleon would have thought of such an apostrophe. The past reflects itself in the world's monuments. It is the com-

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monest event to hear a stupid Englishman pride himself on his nonchalance for ruins. Why? because he is ignorant of history; he sees no true relation between a crumbling ruin and his own well-upholstered drawing-room or smoking-room or billiard-room at home. And yet had not those ruins been, he had never been the comfortable, careless, arrogant, impertinent Anglo-Saxon gentleman he is.

I have heard this story told of a New England clergyman; perhaps some of you may have heard it told of some one else; it may be true or false; but it illustrates what I mean to say. Prying about the island of Malta to discover the scene of St Paul's shipwreck, he noticed an English officer standing in a doorway, and addressed him with the question: 'Pray, sir, can you inform me where the Apostle Paul was shipwrecked?' 'Ha!' was the fierce and quick response. The brother meekly repeated the question: 'Can you tell me where Saint Paul was shipwrecked?' 'No, sir! we want none of your damned conundrums here!' The soldier had probably never heard of the event, so full of interest to the clergyman; or if he had, had never thought of modern Malta being the Melita of Scripture history. In fact, all history is a conundrum to such men. Savages have no history at all.

Everything in mind, in taste, in generosity, in liberty of one's own soul, depends upon the view we get of great relationships. This is why the highest prospects please us least in travelling. The view from the summit of Mount Washington is far inferior to the views we get from many of the lower summits of the White Hills. We see an immense panorama, but reduced to one dead level and removed from accurate inspection. We must get some standing-point, whence we can see the true construction of things. *Con*-struction, not structure only. We must be able to tie this and that together, glance up as well as down, get many vistas in many directions; see how the snow feeds the glacier, and the glacier breeds the river, and the river waters the vale, and the vale debouches on the plain.

The finest view I know of in the United States is from the summit of Penobscot Knob, from which you look down upon the valley of Wyoming. You see the whole geology of the region at a glance,—the Third Anthracite coal

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basin, with its rim of conglomerate,—the long canoe of the Upper Devonian mountain, inclosing it on each side and at the ends—outside of which spread out the Middle Devonian valleys. Far to the north stands the great wall of the Alleghanies, with the edge of the First Bituminous coal basin on its summit. As far to the south the Beaver-Meadow mountains spread themselves against the sky, bearing up the basins of the Second Anthracite Coal Field. Through a bold gorge you see the broad sheet of the Susquehannah river come winding superbly in among the corn-covered plains of Kingston in one direction, and sweeping majestically out again through a second gap towards the west; then for the third time striking across the canoe, between grand cliffs, it passes on towards the sea. Close by, in the centre of the fertile fields of the valley, glitters the beautiful little city of Wilksbarre. Beyond it, on the Kingston side, a small grey monument rises to mark the place of the old story of the Indian massacre, and brings to mind the verses of the poet Campbell. On the same northern bank of the river, a little farther down, you may perceive where men have opened up an Indian graveyard in grading for a grand trunk railway to connect the mines and carry off their produce to New York. A hundred collieries with their tall chimneys and huge breakers (those curious institutions peculiar to American collieries) remind you of the genius of the present day. The hum of many trains fill the air. Just at your feet burrows a deep ravine, with a fine water-fall; and on a plot of grass beside it is a pic-nic party of smart shopkeepers and pretty girls, who claim descent from the Connecticut settlers four generations back. Passenger cars are being dragged up by three incline-planes to a water-shed four hundred feet below you. But, see! A thunder gust is coming up, bred in the Buffalo mountains, which bound the far-off western horizon. It spreads its great black wings to the right and left, laying its thundering bosom on the Wyoming mountain, as it rushes on towards you. You stand upon a natural plate of rock, on which you notice marks, not made by man, nor by the common elements—long, parallel, straight lines—*diluvial scratches* they are called. You may observe they point across the valley, beyond the city, and the river, and the monument, precisely

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towards the gap in the Schickshinny Mountain opposite, through which the river breaks at Campbell's Ledge. A geologist will tell you that these scratches were made by glacial ice coming from Canada. The glacier, entering by that gap, must once have crossed and filled the valley, and so flowed on, southward, over the mountain top on which you stand. And this, of course, innumerable years before the Red man had discovered how to harvest maize upon those bloody flats.

But, tell me! were the Indian to return and seat himself upon this eminence, would he see all this? Or, would a Hebrew dealer in old clothes? Imagine a savage happening here when all beneath his eye was an unbroken wilderness, before a ship had crossed the Atlantic or a lump of coal had been inflamed; and then imagine Sir Charles Lyell, or Henry D. Rogers, or James Hall, or Sir William Logan assembling there around him a knot of geologists, politicians, historians, engineers, artists, and poets; Longfellow and Emerson, Bancroft and Hildreth, Trautwine and Haupt, Bierstadt and Church, Charles Sumner and Wendell Philips, Treasurer McCulloch and Chief-Justice Chase,—if you would comprehend how wholly the sentiment of the beautiful and sublime depends for its aliment upon the knowledge of relationships: and then you can also comprehend how the architecture of our modern days, how the grand architecture of any past age which had one, needed times and revolutions and the unfoldings of all human passions, and the realization of all human ideas, to have an existence even in possibility.

Savages have no art, no architecture, because they have no eyes except for food and danger; because they take things seriatim, each unrelated to the rest. Two sentiments inform the savage mind: death and the love of parents. These produced the earliest art. Their ancient gods were things which threatened death, and persons who bestowed and protected life. Ancestral worship, therefore, or the burial and after-worship of the parent by the child, and of the chief or petty king by his tribe or subjects, constituted the first of all religions; and tombs gave origin to all architecture.

I have made this long digression for the purpose of clearing the way to some correct theory of architecture; with

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no intention, however, of dogmatizing against other more or less accepted theories which do not seem to me so probable, but which, nevertheless, claim more than a passing notice; although I think that I can show that, while they draw attention to some important points in the history of architecture, and to a certain extent explain some stages of its historical development, they offer no sufficiently broad explanation for the great mystery of its original inception in the human mind.

The first of these sub-theories, as they may be called, supposes that the natural caves of the earth have furnished the first and principal suggestions of architecture. Those who adopt this theory point to the fact that the most famous ancient shrines of India, such as those at Elephantine and Ellora, are rock-temples, artificial excavations, or ornamented caverns; and that many of the ancient monuments of Egypt are tomb-temples constructed by driving horizontal caverns into the rock-walls of the Nile; and that most of the ancient temples of Greece and Rome were perfectly dark cells, square, or oblong, surrounded by columns; mere imitations in the open air of the dark rock-temples of India and Egypt. The body of a Grecian temple is called its *cella*. But it is not a certain fact that the rock-temples of India are its most ancient edifices; the topes of the Jains are probably some of them much older. We have lately been informed of the existence of temples built in the open air near Memphis much older than all the known cave-temples of Upper Egypt. In China we have no evidence of any such antiquity in the case of rock-temples; and in Europe and Africa all the most ancient Druid monuments are either barrows or ranges of standing stones set up in the open air. If then we can discover some other and better reasons for the darkness of the Greek and Roman temple *cella*, the theory of which we speak loses its principal support. Here Geology comes to our aid and tells us that the earliest places of human sepulture were natural caves, ceiled up to eternal darkness. Afterwards, when men became partially civilized, they excavated artificial caverns for tombs; but left them unadorned. At the next stage of human life upon the planet these cave-tombs were ornamented first by painting, and afterwards by sculpture more and more elaborate. At a

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still later age mankind began to erect tombs in the open air, especially on plains, near the great cities, far from any rock-walls or mountain-sides, and still they built them dark. Thus we arrive at those great monuments, the pyramids. To these, at length, they added porches and porticoes, such as you see in front of the Second Pyramid. And, finally, these porticoes suggested the construction of temples separate from the tombs; and thus the complicated and elaborate system of more modern architecture took its rise.

The second theory which I will mention has fewer advocates. It supposes that the idea of grand architecture arose in the human mind from beholding those great ranges of natural basaltic columns which are common in volcanic countries. The advocates of this theory are obliged to rely almost entirely upon the classic styles of architecture for its support. They point to Doric and Ionic façades, and the splendid peristyle temples of Greece and Italy. But it is only necessary to call to mind that the earliest temple of which we know, namely, that one lately opened up by Mariette, at a distance of 30 yards south-east from the great sphinx, has magnificent ranges of columns in its *interior*. That it was built by the king I have named, Chephren, the third king of the 4th dynasty, and therefore almost at the opening of ancient Egyptian history, is proved by a multitude of facsimile statuettes found in a well attached to it, all of them stamped with the name of that monarch in a cartouche; in fact, the earliest specimens of sculptured figures, with dates upon them, yet discovered. It is built in the form of the letter T, and its immense roof is sustained by two rows of huge, square pillars of rose granite along the nave, supporting an architrave of alabaster; while a third row of similar pillars runs along the middle of the transept. Its immense age and the unsophisticated manners of that earliest day are signalized by the severity, the methodistical simplicity of the whole interior. Not an ornament, not a letter is to be seen; and it confirms an incidental assertion of Strabo, that in Egypt there used to be temples of a barbarous style, supported by rows of columns, and wholly unornamented. I will explain, in a future lecture, his epithet 'barbarous.'

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The rock-temples of India also, although of far inferior antiquity, are supported within by rows of columns elaborately sculptured. Why should we suppose the early architects were necessitated to copy the rare instances of fine basaltic escarpments, when the necessity for pillars to support a roof arises immediately from the enlargement of the cave. The transition from columns within to columns without the temple is the easiest imaginable. But we will find other reasons for rejecting this theory when we come to consider the idea of the column itself, which stood to the ancient mind for a symbol, quite apart from the temple. The column was a divine statue,—a deity. It was so in all the early ages, to all the ancient peoples; and it was magnificently so employed, with finer and finer effects, as mythologies were born and married to each other. The standing stones of the Druids; the Lot's Wives and Weeping Niobes of the poets; the straight processions of deity-headed pillars at Carnac; the range of eight Doric columns before the Parthenon; and the circles of twin-columns in churches of a later age, were all generated from the myth of men and women turned to stone, termini and Caryatides, gods and priests, standing gigantic and solemn, in orderly silence, within or around the temple of the deity. The proofs of this assertion are too voluminous to lay before you at the end of a lecture; but no true generalization upon ancient art would be half complete without its distinct recognition.

There is a third theory which I must allude to briefly, because it has obtained many supporters in England, especially since the discovery of the Lydian and Carian monuments in the early part of this century. It supposes that all ancient architecture originated in an enlargement to public purposes of the private cottage. The theory depends almost entirely on Grecian art for its illustrations, and therefore is of very limited scope, neglecting most of the architectural records of Asia and Africa and Western Europe. It relies upon the form of the Grecian pediment, and the ornamentation of its architrave. The Greek builder was under the necessity of roofing his temples against a northern sky. Snow fell in Greece, and the pitched roof and over-hanging eves were necessaries. These were supported by horizontal beams, like a fisher's

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hut; the ends of the beams stuck out, and were split by the weather; the rain-drops stood in beads below their edges; hence the Grecian triglyph ornaments; they were mere representations of the beam-ends and rain-drops in stone. Just so you will see long dental shadows cast from the alternate projecting tiles upon the side walls of the houses in Southern France, and then these shadows imitated in stone around the eves of the Cathedral Church of Toulouse. But suppose all this true, it is only the history of one part of the ornamentation of one style of architecture, and that of a very recent age. The great Doric temples at Pæstum are supposed to have had no roofs, and yet they had end pediments. Besides, the pediment itself is a religious symbol, apart from all necessity for a roof. It represented the pyramid, as the column represented the obelisk. In the pediment the Greeks placed the statues of their gods. It was their Olympus. But the Greek gods were men of a still older time, and the Greek pediment had come to be the Olympus of their gods, only because the previous pyramids had been the tombs of kings. And so with the architrave under it. It was not the string-piece of a house, laid on the top of a wall to sustain the roof; it was a separate and ancient symbol by itself; it replaced in the modern Greek art the far more ancient flaring cornice and cord-moulding of the Egyptian temples. In fact, all these theories, based upon the local styles of Greece, have lost their credit with archæologists since the discovery of the so-called 'proto-doric' style of Egypt. The Greeks got all the essential ideas of their Doric architecture from the ancient Egyptians; and all the variations of it which are called Ionic from the ancient Babylonians and Assyrians. This is now so well made out that it is a generally accepted truth.

The last and fourth theory of the rise of architecture which I need mention is still more local in its application than the preceding, and therefore as a general theory still less acceptable. It supposes that the first idea of grand architecture came from the woods; from overhanging trees forming long, lofty vistas to the eye, closed at the farther end with interlacing boughs and leafy tracery. Behold a Gothic church! See how its piers arise on either hand like mighty trees! See how the ribs meet over-head!

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See the west window with its hundred mullions! What can be more evident than that the architect had trod the forest aisles, and built them o'er again in stone! It is a pity to retire from such a phantasy. Nor need we. The last of all architecture must not only include all that went before it, but involve new elements of beauty. The free-masons of Germany and France were princelike poets, and they introduced into the grim conventional grandeurs of the Egyptian art, and into the cold perfect chastity of Grecian art, sweet humours and warm blood, fresh from the heart of nature. They were Christians; while their Grecian ancestors were pagans; and the old Egyptian fore-runners of all were dwellers in the tombs. They broke up the massive piers into reedy clustered columns, and shot their branching tops into mid-air to meet in bunches of foliage. They covered up the faces of the damned old gods, of the box-shaped capitals, with leaves and flowers, so that the tender bosoms of their children might not heave with terror as they passed them by in advancing towards the altar, where the Lamb of God was taking away the sins of the whole world. They let into the dark old tomb-like temple all the heaven of the sky, all the warmth of the sun, with healing in its beams; and painted the clerestory with a universal rainbow; promising, by all the angels, saints, and martyrs in those windows, that wrath should be for-gotten. Then they went forth and built tall towers; and from their tops shot spires far into heaven, covered like-wise with angels and with roses; and hung therein whole chimes of bells to drive away all evil, and shower down in music the blessings of the upper and eternal spheres.

Thank God for these cathedrals! And for their loving-hearted, large-souled, Caucasian Christian architects. They builded on the ruins of foregoing styles, out of the genius of foregoing days; but in the new dispensation of a su-perior beauty and a diviner truth.

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LECTURE IX.

THE GROWTH OF THE ALPHABET.

MEN must have lived a long time upon the earth before they invented an alphabet. It is a wonderful product of the senses, the fancy, and the understanding co-operating. Its use by any people proves that that people has been civilized. If this be true now, it must have been true at the beginning. Thinking men set so high a value on letters that they have been disposed to deny man's genius the ability to invent them, and have therefore affirmed that God gave Adam letters in Paradise. But the genius of man, as it grew and developed its resources, was capable of all things necessary. If the creative plan, revealed in other parts of the creation, was to find its consummation in the development of human life, through all its stages, upward, to the highest civilization, then the germs of literature were planted early, and appeared in due time. The only questions modern science feels called upon to ask are: how? in what forms first? and afterwards?

I said, in my last lecture, that the first efforts of mankind to express the æsthetic sentiments were made in the direction of sculpture and architecture, under the guidance of certain obscure ideas, which I did not attempt then to explain. This I attempt to-night, because these same obscure ideas became openly and plainly embodied afterwards in literature. They decided, in fact, the shapes of the first letters, and the modes adopted by the earliest sculptors and architects for giving a plainer meaning to their images and temples. What I mean to assert is, that the art of letters grew out of the arts of sculpture and architecture, and that we have no trustworthy clue through the mysteries of the

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origins and growths of alphabets, until we have learned to comprehend the mysteries of primeval architecture.

The first architects were beyond all doubt those religious teachers who civilized and intellectualized the races to which they belonged. Philology teaches us this much, if nothing more. The Greek word for a poet, ποιητης, involves the Greek verb ποιειν, to make or build. But the word poet is the same as the word bard, and the Hebrew word for cutting, carving, making, creating, was *Bara*. So the old northern name for a poet, *s-kald*, is represented by the ancient Egyptian words *s-kar*, to cut,* and *s-χar*, to make. The old Egyptian word *bak*, to carve, became in time the Latin *fac-io*, and the German and English *mach-en*. The high priest of Rome was called its *pontifex maximus*, or chief builder of arches or bridges.†

But there are other strange combinations of these functions of the priest and the temple-builder. The oldest Druid temples we know of are circles of stones. The Greeks called circles κυκλοι, dropping the *r*. The word seems to have been originally *kir-kir*, or κελ-κελ; for in all languages the letters *r* and *l* are confounded and exchanged one for the other. Now the oldest of all architectural edifices throughout the Mediterranean countries, except Egypt, are old walls and ruined buildings of immense stones, called Cyclopean. I cannot go into the discussion of the nature of the Cyclops, but I think it can be proved that they were the representatives, in fable, of the wild Druid priests of the circles of standing stones, like Stonehenge, from which we get our word for church, or kirk.‡ In archaic Grecian times all the poets before Homer and Hesiod were grouped into one class, representing a hoar antiquity. They were known as the κυκλικ (cyclic) poets, the poets or bards of the circle. The earliest of them all was called Arctinus, or the Arkite. Their themes were exclusively Arkite; their poetry is described by the Greeks

* Compare English 'to scar;' Welsh mountain-sides, *scars*.

† *hs*, to sing, a bard. Man squatting, wrapped up. Sarcophagus of anχ-hepi. British Museum. Bunsen's Ideograph, 104. Compare Hs-iri, Osiris, and his picture, Ideograph, 130. The judge is still more strongly marked than the poet. He sits in a bath of water. He is called *stm*, meaning judge, one who hears truth. D. 34. Ideograph, 97. In Ideograph 27, the panther skin replaces the water.

‡ See the whole discussion from Bozzel in Lemprière. (B. 52. 32.)

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of a later day as rude, like that of the Welsh bards; their style was Egyptian-like in its stiffness and severe simplicity. Their sphere of thought was bounded by the magic circle of primeval mythology; their line vanishes into the dim background of Græco-Asiatic literature; one of them, called the Ethiopian, sang of Memnon. They were entirely different from the poets who sang the wars of Greece: the historians, comedists, and love-song writers of a later age. To the Greeks of Plato's day, their poems corresponded to the Psalms of David in our sacred Scriptures, or to the hymns of the Rig-Veda in the Hindu Scriptures. When the Homeric scholiasts quoted them, they simply said ἐν κυκλῳ λεγει, 'as it is written in the circle,' just as the apostles quoted the books of the Old Testament, saying, 'as it is written in the prophets.'

Proclus thus describes the ancient Epic cycle. I give a free translation of his words: 'The Epic cycle is deduced from a mixture of heaven and earth, from which came three hundred-handed sons, and three Cyclopses. It briefly discusses gods and other fabulous things, and contains some history. It is ended by the labour of many poets at the murder of Ulysses, by his unconscious son Telegon. Its hymns are still studied, not for the sake of virtue, but for the good order of its facts. And it preserves the names and countries of its bards.'

Let me give you one of those ancient sagas,—the story of Pelops. 'In Sipylus in Phrygia there once reigned a wicked king Tantalus, son of Jupiter; he had two children, Pelops and Niobe. At first the gods were his friends and feasted at his house; but he committed two great sins, for which he was sent to hell, where he remains, standing up to his lips in water, unable to obtain a drop to quench his raging thirst, while a great rock, suspended over his head, threatens every moment to fall and crush him. His prime offence was that of divulging to mortals the secrets of the gods, which he heard at his own table. His second offence was the diabolical trick which he played upon his Olympian guests, in cooking his own boy Pelops and serving him up as a ragout, to see if their omniscience would discover what it was they ate. Mercury restored the boy to life, but could not recover his shoulder, which had been already eaten. So he made the boy a new shoulder of ivory. His

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fresh beauty now ravished the heart of Neptune, who carried him, in his own golden chariot, to the top of Olympus, until the rest of the enraged deities, after a furious knock-down and drag-out fight in the royal dining-hall, had settled his father's hash; then he was carried back, to rule in his father's stead. His descendants for three generations reigned in Argos; that means the Peloponnesus (Pelops' ship, or Pelops' isle). And his bones were afterwards taken to Troy, and became the Palladium of that unhappy town. His sister Niobe had all her children killed by Diana, and she herself was turned into stone, and still sits weeping on a mountain in Phrygia.'

There is no disputing the theory, that in all the items of this story (and it is only an example of the whole class of Cyclopean poems) there rules a reference to some original history *like* that which the Hebrew poets have embodied in the story of Noah and Mount Ararat. Tan-tal-us represents the TOR, or mountain, submerged to its very lips. The stone above his head is the ark about to touch the mountain-top. Tantalus is in Tartarus; is, in fact, the same as Tartarus, the place of Torture, the cavern in the mountain, the home of mysteries, and horrors, and woes, the hölle, hole, or hell of the Germanic nations. Niobe, the daughter of the mountain, is again the ark, turned to stone; her name, Niôb, is the Egyptian word Θεβ, the ark of Osiris, and the Hebrew word Theba, Noah's ark. The Greek TAURUS, a mountain, is the Arabic TEL or TOL, a mountain. But the Shemitic nations wrote all their words backward from right to left, and so this word TOL becomes LOT, whose wife (her name is no where given) was also turned, like Niobe, to stone. Pelops, Niobe's brother, was the Noah of the story. First, his father offered him up to the gods, as the Brahma of the Hebrews offered up his son Ikswaca (Isaac). Neptune, or the rising deluge, carried him up in the golden car (the ark) to the top of Olympus, until his father was destroyed, that is, until the Ararat was sunk to his very lips in the hell of waters. Then he was restored. His descendants reigned in Argos; they were priests of Arkism. He himself became the divinity of the TOR, the city of Troy. And so on, *ad infinitum, et ad nauseam.*

I did not intend to introduce the subject of mythology

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so early in this course of lectures. It will claim our attention fully hereafter. But I am forced to it, in order to state clearly the true theory of architecture, and the true origin of the alphabet. Architecture began with imitations of Tantalus and Niobe and Pelops in stone. Architecture began in attempts to build pyramids like Ararat, and to place upon their summits shrines of worship and houses of God symbolical of the ark. For this purpose islands were especially selected because they were surrounded by the sea. Sometimes even they were said to float, as in the case of Delos (TEL). The marshes of inundated deltas, the level sealike expansions of the desert sands, were equal favourites for building places. Where water could not otherwise be obtained tanks were dug, and in their centres pyramids and temples were erected. Especial use was made of every natural peak of rock around which the fluvial mud of some great river, like the Ganges, Euphrates, Nile, or Rhone, had settled; and on these the traveller is sure to see the ruined temples and monasteries of the old religions converted now into Christian churches, wherever Christianity has taken possession of the ground.*

Old books on architecture are full of definitions of this or that *style*. Until recently none but the so-called classic styles were recognized as genuine architecture. All else was merely barbarous. The classic styles were those of Greece and Rome,—Doric, and Ionic, Corinthian, Tuscan, and Composite. But when Bruce and Belzoni discovered Doric columns in Upper Egypt, and Layard and Lassen Ionic capitals on the banks of the Tigris and Euphrates, writers on architecture began to take larger views of the subject. When Daniels published his magnificent plates of the Pagodas of India, and Kingsborough and Stephens made known to the world the Egyptian-like edifices of central America; when other travellers had brought to notice the monuments of Thibet and China, the immense statues and Cyclopean walls of the Pacific islands, and the Druid Tolmens of the Sahara desert,—then it became possible for Fergusson to write on architectural science a text-book

* The pyramid of Cheops is said to be built on such a rock. Another, a ledge of rock *in situ*, is seen in the floor of the Mosque of Omar. St Michael's Mounts. See the St George's of the Delta of the Rhone, &c., and those back of Arles.

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as far in advance of old Vitruvius, as Lyell's Principles and Dana's Geology are in advance of the local classifications of Werner, or of Eaton's Manual.

Still the great *primal* principles of architecture, in my opinion, have not been clearly stated by any writer. We are bewildered by an ever-increasing multitude of pictures. We must give up for a moment the study of these details, and take a more distant and summary view of the great edifices of the world, if we are to detect the aboriginal principles of architecture.

Let us select a Chinese or Thibetan temple, a Hindoo pagoda, an Egyptian propylon, and a Norwegian church, and set them side by side before us. Now the question arises, are there any prime or essential features common to them all? If there be, these common traits must give us some clue to the universal meaning of architecture, and therefore to its aboriginal ideas.

I will not delay you in the answer to this question. Look at these pictures and you have the evidence before you.

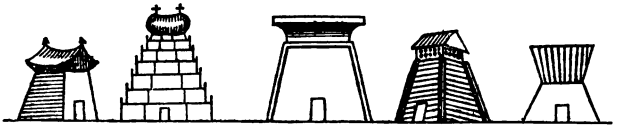

Fig. 1. Thibetan, Hindu, Egyptian, and Norwegian temples.

Fig. 2. An Egyptian hieroglyphic.

These buildings—in their dates and situations so remote from one another, in their details of ornamentation so different from each other—show, nevertheless, one common plan. Each of them consists, as you see, of two chief members—a lower and an upper. The lower member is a square pyramid; the upper member an over-hanging box. All the original or religious architectures of the world have been framed upon this plan. And I leave it for yourselves to judge if it be not the plan you would expect the ancient priesthoods to adopt, if we be permitted to suppose that the first great fact of human history was some such grand catastrophe as that of Noah's flood. The lower member of the plan would represent the Ararat; the upper member would represent the ark that rested on its summit.

But subdivision is the universal primary mode of growth, as all oologists well know. Every germinal cell first elon-

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gates and then parts in the middle to form two, which in turn elongate, separate, and form four. These four form eight, and so on through eternity. Thought, too, obeys this law of matter. The first mythology must be, in course of time, extended and bisected, like all other living things. The creation is an apothecary's counter; heresy is its golden spatula.

We must investigate the rise of some great schism in mythology, which produced also a great first schism in architectural ideas, resulting in a two-fold historic development of the original plan.

While the single pyramidal pile, with the single shrine upon its apex, continued to be, in China, in Thibet, and in India, the type of the religious edifice, there arose in Egypt, and spread throughout the European world, a duplicated type of temple—two mountains side by side, two arks upon their tops. The earliest Egyptian monuments are single; those of the middle and later empires are double. Two vast propylæa tower side by side to form the portal of that immense group of courts and shrines which we call the temple of Karnak at Thebes.

In modern times the Christian cathedrals were built upon this plan, but with a difference. Instead of the twin towers being themselves capped with two arks, a single ark or nave was placed between them. Look at the huge square Roman towers at the west end of the Abbey of Jumièges, near Rouen; at the great west-end Norman towers of William the Conqueror's abbey-church for men in Caen; at the Gothic towers of Notre Dame, in Paris; at Wren's west towers of Westminster; at all the most celebrated cathedrals of western Europe, some of which have been completed during our own lives. It is the plan of Christendom.

What explanation now has history, or natural history, to offer of this singular departure from the original type of temple? Does it mark the origin and growth of that nice æsthetic function of the mind, which we call symmetry? Is it related to the rise of those obscure but natural speculations of the old mythologists, which resulted in the spread of Phallic worship, and which duplicated all the gods of Egypt and Greece, and laid the foundation for the early speculations of philosophers respecting the male and female

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elements of force in nature? or does it stand in evidence of the first attempts of the human intellect to oppose dualism to unity, and satisfy the human soul with a philosophy that shall explain the origin of evil without detracting from the goodness of omnipotence? At all events, I think I can convince you it was no mere accident.

Perhaps, if we could discover why the Hebrew story of the deluge, written in southern Syria, went to the borders of the Caspian Sea, to Armenia, to select a mountain for its scenery, we might solve the riddle. The Armenian Ararat (see Fig. 3) is an extinct volcano, rising directly

Fig. 3. Mount Ararat in Armenia.

from the surface of an immense plain to the distinguished height of 13,000 feet. The plain is itself 3000 feet above the sea; all the upper part of the mountain is therefore within the limits of perpetual snow. But it is not a single cone; it is grandly duplicated; and in the notch between the cones tradition says the ribs of the old ship still sleep; but woe to the mortal who attempts to reach its dreadful resting-place!

The cones are of unequal height, one being 13,300, the other only 9500 feet above the bed of the Araxes, flowing through the plain. 'Nothing can be more beautiful than its shape,' writes Morier, 'or more awful than its height. All the surrounding mountains sink into insignificance when compared to it. It is perfect in all its parts; no hard, rugged feature; no unnatural prominences; everything is in harmony, and all combine to render it one of the sublimest objects in nature.' And we may well add,

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one of the most terrible. It is a sleeping lion. In the earthquake of 1840, which lasted from June until September, masses of rock and ice were thrown from the upper cones, 6000 feet at a single bound, covering portions of the plains below with desolation.*

It seems to have been this splendid object that captivated the fancy of the human race as it moved westward along the historic belt of emigration. Mount Masius, the Damavend, Mount Meru, the Sufued Koh,† Adam's peak in Ceylon,‡ and all those other *typical diluvial* summits of central and eastern Asia were but single peaks, and satisfied the transcendental idea of a mountain. This double cone of Ararat (or the two Ararats, as they are called,) produced a ripple in the stream of tradition, divided it, and gave birth to the second grand order of duplicated architecture.§

There must have been among the early masons the same diversity of natural temperament as now exists among their representatives. One class would be idealists, and claim that the true prototype and divine original was the mountain idea in its absolute unity. Another party, more sensuous and literal, and perhaps more artistic, would devote themselves to the expansion of that first idea, and to the imitation of the actual Ararat, producing all their forms in double series. Thus even the Druid barrow came to be elongated and furnished with a peak at either end; for it is scarcely disputed now that the long barrows are of a later age than the round mounds. Thus, also, in Italy, the pediment was split into two, and the urn was placed

* See Major Voskoboinikof's report in the *Athenæum* for 1841, p. 157; quoted in Kitto, *sub voc.*

† Or White Mountain, on the road to Peshawur and Cabul. Opposite it is Noorgill, or Kooner, a towering hill. Here the Affghans set the Ark. (Burne's Travels in Bokhara, i. p. 117.)

‡ The Samaritan Pentateuch gives in Gen. viii. 4, *Sarandib*, which is the Arabic name of Ceylon.

§ הרי 'The mountains *of Ararat*.' It is nowhere a Bible name for a mountain. Gen. viii. 4. See only elsewhere 2 Kings xix. 37; Is. xxxvii. 38; and Jer. li. 27. It must have been east of Mesopotamia; see Gen. xi. 2, and Kitto's fine argument. In the Sibylline verses the mountains of Ararat are in Phrygia; Απαμια in Phrygia was called by Greeks κιβωτος, the Ark, because enclosed by three rivers in the shape of an ark.

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between its peaks, instead of on the summit of the pediment. (See Fig. 4.)

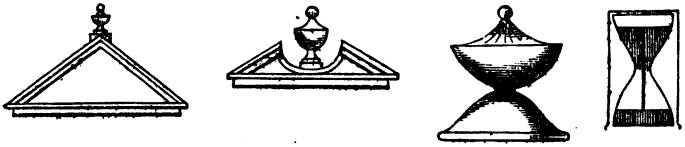

Fig. 4. The Pediment, split to receive the Urn; and the Hour-glass.

We are now prepared to speak of 'styles,' and to study architecture in detail.

Every race, almost every nation, developed the Arkite plan, whether single or double, in a separate style: a style of its own, or a composition of the styles of its neighbours and of preceding ages. Nothing human remains unchanged, except fundamental ideas. The whole effort of nature is to put forth buds and branches on every side, so as to realize an idea to the utmost. Nature has no sympathy with our purist prejudices. She is no quaker. She never grows cold and stupid. She is never consistent; she is always ready to go back and begin again, as water, when stopped by some obstruction, finds new channels that suit it quite as well. Every style has had its own particular and peculiar beauties; and every style has begun in simplicity and grown composite; or become degraded, as we choose to say. Every original symbolical form has been taken up by the apprentices of the master-mason who invented it, and been elaborated, and intensified, and repeated, and varied, in all possible ways, and combined with other symbols, until its personal identity has become lost amid the crowd of similar forms; until its nature has been perverted, and its meaning contradicted, and its eminence exchanged for degradation, and its beauty bartered for some cheap utility.

As in eastern lands the slave becomes sultan, and the sons of princes have their eyes put out and become beggars in the streets, so in architectural styles the fisher's skiff has risen to be a cathedral, and the pyramid of Cheops sunk to become the chamfered point of a graveyard obelisk.

It was in obedience to this organic law of reduplication and variation, that the primitive symbolism of

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architecture developed itself. You remember the story of the Apostle Paul and the silversmiths of Ephesus, whose trade was to make shrines for the great goddess Diana. It is understood by antiquarian scholars that these shrines were small portable models of the Ephesian Temple, perhaps intended for private oratories, like those plaster shrines of the Virgin Mary, which good Roman Catholics buy every day to place upon their dressing-tables or mantle-pieces. So in the earliest times, the more celebrated monuments of architectural magnificence were thus reduced for private devotion.

The same desire to duplicate the symbol provoked the manufacture of ornaments in the shape of temples; ornaments not only for the person, but for the temples themselves. A modern instance of this application of art is to be seen in York minster, in the centre of which, and hung midway between the vaulted ceiling and the floor, or, rather, I should say, supported in that position by an arch-like partition in the church, called a rood loft, is seen the great organ, a model of the cathedral itself. Just so, in ancient times, the idea of a truncated pyramid supporting an ark-like cornice was thinned down to the idea of a square column supporting a box-shaped capital.

We must start all architecture from the Pyramid; as we must draw from Ararat, or some other sacred mountain, the source of all mythology. BR-BR was the old Egyptian or hieroglyphic name for a pyramid. All architecture was in its beginnings bar-bar-ous, that is, pyramidal. The term was afterwards extended in its meaning, by the Greeks, to include all other objects foreign to their refined tastes and their artistic religion. They called the Thracians, the Phrygians, the Syrians barbarians, although in many respects more advanced in civilization than themselves, not because these nations committed savage acts, or erected less magnificent monuments than the Greeks themselves, but because these nations, in their religious architecture, and in their superstitious rites, preserved a large measure of that Arkite or pyramidal mythology which took its name from the pyramid or **BAR-BAR** of old Egypt.*

* Πίρωμις (homo) δέ εστι κατ' Ἑλλαδα γλῶσσαν καλὸς κ'αγαθός. Herod. II. 143. Uhlmann, in his De Veterum Egyptorum lingua et litteris,

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The same origin is to be assigned to the obelisk, the Egyptian name of which, however, was TχN. Some have talked absurdly enough about its being a representation of the forthputting power of nature. Others have supposed it an invention of the fire-worshippers to represent a flame. But the first appearance of fire-worship in Egypt dates back no farther than the 17th dynasty, and soon became a detested heresy; while there are obelisks of the 12th dynasty.

The obelisk was merely a portable, or idealized, or adjunct pyramid. It stood isolated in front of the pyramidal propylon. When the propylon was duplicated the obelisk was duplicated also. All obelisks are terminated above in a genuine minute pyramid.

The same origin is to be assigned to the solitary column in other lands, or to the pairs of columns, like those which stand before the rock-temples of India. Solomon made two to stand before his sanctuary in Jerusalem, calling the one Boaz and the other Jachin. And the Jews were accustomed to plant two trees in every garden to represent these columns.

We reach next, in order of development, the arcade. The Egyptians had already used it for their inside galleries and temple-halls. The Greeks and Romans, obliged to roof their sacred edifices, placed it outside, underneath the gable end or pediment; increasing the number of columns from four to six and eight, and finally carrying whole ranges of them around the temple cella. The pediment

p. 31, suggests that Herodotus was led to this etymology by the Egyptian (or Coptic) expressions φρωοε, pulcher, μηι, justus esse. But I think it quite possible that Herodotus rather gave the Egyptian *sentiments* respecting the pyramid, as the oldest, most sacred, best, and most beautiful thing in the world. On page 27 Uhlmann thinks, from the fact that the Egyptian *pyramus* is in Arabic ﻫَﺮَﻡ, that the *py* is no essential part of the word, but only the Coptic article; while ραμα is the Egyptian word for *height*, as it is in Hebrew (Kirch. Scala. M. 49). Compare Rossii Etym. Ægypt. 159. Kitto's Bibl. Dict. Other etymologies have been proposed, such as π-ουρο-βα, sepulchre of kings, but the subject is still in the dark. Comparative philologists, however, will agree with me that πυρ-μιδ is directly convertible into βαρ-βαρ, or vice versâ, and that in the absence of any universally accepted etymology for πυραμις, the Egyptian synonyme given in the text above is perfectly good ground for a new theory to stand upon.

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which they supported was but another pyramid elevated in the air. The words *pyramid* and *pediment* are the same in their alphabetic elements. It was in the tympanum of the pediment that the Greeks assembled the images of their Olympic deities.* The whole roof of the Grecian temple, although so different in outside form, was, in the general plan, identical with the upper or ark member of the structure. The Romans, not content with this, went one step farther, and placed upon the peak of the pediment an **URN**.

I must stop for a moment to enforce the argument I am pursuing with a definition of this remarkable word. We think that it is merely the Latin *urna*, which has become the property of all the Romanic languages. But, in fact, the Latins received it from the East. It is nothing more or less than the Hebrew name for the *Ark of the Covenant*, ARN (ארן). But we can go still farther back. It was the Egyptian name for the *cartouche*.

Now the cartouche is an oval enclosure containing the hieroglyphic letters which make a royal name. The Pharaoh in his sarcophagus or urn was symbolized by his name in its cartouche or **ARN**. The Romans merely applied the word to express a coffer of peculiar shape made to preserve the ashes of the dead. The modern urn is the lineal descendant of the symbolic sarcophagus of Osiris, and of the ark of Noah.

Look at its peculiar shape (Fig. 4). It consists of a combination of the same two members, the ark upon the mountain top, which I before described as constituting the essential parts of every piece of architecture. This urn the Romans placed upon the top of the temple pediment.

Architects have capped the temple with a *dome* to duplicate and make more eminent the representation of the mountain, and have placed on top of this a lily, a pine apple, a lantern or *cupola*, to represent again the ark. The Mohammedans have chosen the more appropriate ship symbol of the crescent.

The same compound symbol is seen inside the churches of Christians in three forms: first, in the *altar* (al-tor, the mountain), and upon it the communion cup; secondly,

* Compare the cap on the head of Perseus, ornamented with figures of the deities.

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in the baptismal *font*, upon its spreading sculptured base; and thirdly, in the *pulpit*, with its ark-like box, from which the preacher prophesies, and with its quaintly-carved stem below. Its very name *pulpit* is convertibly identical with *pyramid* and *pediment*.

I leave a fruitful theme, capable of infinite and delightful illustration; as any one may see who enters one of the modern Catholic churches, built under the supervision of the Jesuit priests, where, especially about the sanctuary, symbol is piled on symbol, each one the mere repetition of the other, until the eye is wearied with confusion and the taste disgusted with excess.

Let us go back again to earlier times, when moderation and simplicity still kept the symbolic shape of ornaments sharply cut and easy to be recognized. Let us take for a good specimen to study, the Doric column.

The Doric Style, so called, was not invented by that small tribe of Grecian people called the Dorians. As I have already stated, it is found in Upper Egypt, in architecture of great antiquity. It would almost be just to say that the Dorians were called after *it*. They were worshippers of the TOR; and the Doric column became in their hands the purest, simplest, noblest, and most beautiful of all the forms that the architectural idea has ever assumed. Look at it. Poets and painters have vied with each other in exhausting the vocabulary of admiring epithets, to describe its severe simplicity, its ENQUISITE symmetry, its graceful majesty, the charm of its lights and shadows, the serenity of its unconscious strength; the delicacy of its capital, yielding to the pressure above, yet sustaining the crushing weight; and the vertical contrast to the horizontal architrave, of its fluted shaft, rising out of the expanded marble floor of stilobate like an island-mountain from the placid surface of the sea. For that is just what it was meant to represent. Therefore the Doric column has no base. And therefore, also, the Doric column is channeled like a mountain with valleys. The Doric channels are the ravines descending to the water; their shape is quite different from that of the Ionic or Corinthian flutes.

Remember that we are dealing with a product of the fancy! Remember, also, that the early fancy of mankind was a heated fancy, and had lost none of its fire in the time

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of Pericles. It was a religious fancy, an unscientific fancy, an enthusiastic fancy, a fancy sticking at nothing by which it could reach its symbolistic ends. At all events, it was no modern, materialistic, cynical, critical, mechanical, steam-engine building, Wall-street or State-street jobbing fancy. All the history of art tells us that it was finer than our judgment of it.

I have already mentioned the literal exchange of L for R all over the world, and the fact that the Greeks and Phœnicians said TOR and ZUR where Arabs said TOL and TEL for *mountain*. So the Greeks named the shaft of their Toric column στυλη (S-TOL), from which we get our English word *style*, through the little column-like pencil with which the scribes wrote upon tablets of wax.* Is not this a curious illustration of our proposition that the men of letters in old times were the architects? But I will give you now a still more curious and significant coincidence.

The favourite Egyptian hieroglyphic form of the letter A was a *feather*, plume or quill.† It stood at the begin-

Fig. 5. A; IU; Goddess Ma; Truth; Crowns of Upper and Lower Egypt.

ning of all words the first sound in which was A. But a jackal holding a feather was the emblem of a *scribe*. On the head of a sitting goddess the upright feather meant historic *truth*. MA, the goddass of truth, had two feathers on her head; as the shrine had two obelisks before it on which were written its history. The double letter, AA, was originally, therefore, written with two feathers, which, however, in time came to stand, in the later alphabet, for the letter I, or rather the diphthong IU, as in the word Judæa. Observe the coincidence! The Coptic *word* AA means to *build*. And the old Egyptian name for an edifice is simply A, the *single letter* A. The scribe and the architect were one. The temple-wall and the chisel which cut those immortal hieroglyphics into its surface were one. The

* The S initial stands for SAN, *Sacred*.

† See Bunsen, p. 556 and 561, and Ideography, No. 174, 173. (Fig. 5, above.)

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mountain, *tol,* became a carpenter's *tool;* the column dwindled to the engraver's *style;* but the soul that lived and spoke in all of them never changed; it was the same throughout the series.

We have been occupied with but one part of the Doric column, the shaft or style; let us now look at the other member of it, the *capital.* There are etymologies connected with this also. I have said more than once that the words TOL and TOR were the same: here is another proof of it. King James's version calls the capitals of Solomon's two columns, *chapiters.* You will find no etymology of capital in the books, except in the form of a reference to the Latin *caput,* a head, *capitalis,* principal. But capitalis will not explain that other equally Arkite word, the name of the Roman *capitol,* that *citadel* which contained its native gods, its treasures, its recorded laws, and the heart's love of the great Republic. Every city of any note in the ancient world had a similar citadel, the home of its tutelary deities. And what was such a citadel called? An *ark*—of course: **ARX.** And the records which it secured—what were *they?*—**ARC***hives.*

The capitol of a column, then, is the CAP of its TOL, or style; the ship upon the mountain-top. And it was precisely in the Doric order of architecture, the shaft of which represented the *mountain* idea with most precision, that we have a capital most simply and purely representative of the ship. When I thus identify *cap* with *ship,* it is only what is done every day in using words similarly allied, one of which retains and the other has lost the initial *s*: such as *cup* and *s-coop;* the farmer calls his cap-like bee-hive a *s-cap;* the sailor calls the master of his ship a *s-kipper;* and the little boat from shore a *s-kiff.*

The word *cup* signifies holding or containing; and in such modern words as *coop* the form of the vessel is not at all essential to the meaning. A hencoop is not at all cup-shaped, but yet acts the part of a receptacle. And even the Latin *cap-io,* I take or hold, suggests no form. But at the beginning the form *was* essential to the meaning. The Hebrew word for the *palm of the hand,* therefore, was CAP (כַּף), because it throws itself into the form of a cup to receive anything. Many names of sacred shrines like the Kaaba of Mecca, and the profane little Kaabahs

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which our young ladies find so convenient, are traceable to the same root which gave the ship its name.

Going back beyond the Hebrew use of the word *cap*, we get still clearer light upon its origin; for the arm stretched upward in prayer or oblation, with the palm of the hand turned upward, is one of the commonest sights upon the monumental walls of Egypt. Look at it for a moment (Fig. 6), and see how the Arkite imagination would seize upon this living symbol, this Doric column done in flesh and blood. The Hebrew word for *arm* was DRO or TOR (זרע).* The hand lifted in prayer was therefore a true *caph-tor*, or capital. There is one very remarkable ideograph on the Egyptian monuments which can be explained in no other way than by reference to these facts. It is Bunsen's No. 99 (Fig. 6), a man kneeling and holding up a basin, with the pronunciation *n'ham*, and the meaning *to save*. What has the holding up of a basin to do with salvation? Nothing, unless there be a reference to the great salvation of Arkite mythology.

Observe now how our English word *arm* fits into all this. In drawing your attention to it, I am not digressing; but, on the contrary, leading on directly to the main subject of this lecture, which I am impatient to enter upon in a more systematic manner; but all these preliminary details were necessary, and will come of use. First, let me once more insist upon the identity or interchangeability of the liquids L and R. Secondly, you must accept Grimm's law as equally true, although I cannot stop to prove it *in extenso*, that the labial letters B, P, F, V, the vowel U, and the nasal M, are also interchangeable in a certain order in all languages and dialects yet studied. Do you not call Maria and Mary, Molly and Polly? Do you not call Martha, Matty and Patty? Margaret becomes Maggy and Peggy, &c. Keeping this law in mind you will see how the English word **ARM** corresponds with the word **ALP**, a mountain, precisely as the Hebrew *dor*, an arm, corresponded to the Phœnician *tor*, and the Arabic *tel*, a mountain. You can also see why the Mont Blanc of Greece was called **OLuMpos**; and why the mountain beast of Asia with the houdah on

* זרע the arm, the shoulder of an animal, force, strength, &c. כְּלִי belongs to a different set of ideas, regarding the arm as a *weapon*, or a *tool*.

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his back was called an **EL***e***P***hant;* and why the bull with the crescent horns received the Syriac name of **ALF**. The mountain was not named from the arm, the arm was named from the mountain, and then only when held up in adoration, with some votive offering in its hollow palm. The mountain, the alp, was the beginning of all things in sacred history. Hence all ancient things were named after it. Olympus was the Ararat of Europe, and, curiously enough, replaces Ararat on the coat of arms of the Duke de

Fig. 6. Doric column; Caph; n'ham; tam; escutcheon of Nevers; Crown of the Pharaohs.

Nevers, among the beautiful sculptures in front of the old chateau in the middle of that little quaint city (Fig. 6). The most ancient and venerable river in Greece was named **ALF***aios*. The aborigines of Europe were called **ELV***es*. The Latin word for *formerly* or *in ancient times* was **OL***i***M**. The Hebrew word for eternity, or unknown infinite beginning, was **OLM**. Hence the first letter of the alphabet had to be **ALF***a*, or as the Shemites called it, **ALF**. And its shape also had to be Alpine, like its name. The letter A is simply a pyramid or mountain with a line drawn across it. In the ancient bardic books of Ireland, that seat of the learning of old times in the Druidic west, whenever the word *mountain* occurred it was not written out in full, but in its place they merely wrote a letter A; that was sufficient.

The science of philology as it now stands is largely made up of the results of the investigations of learned men into such subjects as these:—What is the whole number of distinct sounds which can be uttered by the human organs of speech? What special number of these sounds have been selected out of the whole number for use, by different races and tribes of men in different countries? What distinction of these sounds can we make into vowels, semi-vowels, and consonants; and of the consonants into sonants and surds, aspirates and sibilants, labials, dentals, linguals, gutturals and nasals? What relation do some of these

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sounds as spoken in one language bear to others of them as spoken in another language; in other words, what is the real nature of those processes of transmutation, permutation, inversion, and reduplication of sounds which are all the time going on from generation to generation, as the tribes of men meet and influence each other's speech? How can we understand the formation of dialects? What are the true derivations of words? and what is the range of those modifications which time keeps making in the meanings of single words? An immense range of investigation into which I could not pretend to enter.

I have been keeping exclusively in view one special inquiry: what was the origin of the alphabet? Why were certain figures cut upon the surface of stone walls to represent certain sounds which issued from the human mouth? On what principle was this done? Why, for instance, and taking the first letter as it comes, and in its archaic Greek or Doric form, why was the vowel sound A painted to the eye by two strokes like legs and a third stroke across them? What is there in the *sound* A to suggest such a *shape?* Is there any *natural* connection between the two things? If not, then is there any *artificial* connection between them; any *fanciful* connection? If so, what *governed the fancy* of the man who invented the letter A, to cause him to establish such a connection? Could it have been by any possibility an accident?

This question, which goes down to the very roots of the science, has kept many brains busily thinking in all ages; for the pure and direct tradition of how it was done has been lost this long time, and it must be rediscovered in very roundabout ways. Nature loves to hide the beginnings of things, and seems to kill off her early creations merely for the sake of giving palæontologists a chance to develop their own intellects by the study of the fossils. It was a great question in the first centuries of the Christian era when the Talmuds were written, and the Indian Puranas, as this pretty Oriental story may show you:—

When Jesus was a little boy, his mother Mary took him by the hand and seated him at the feet of the village school master, among the other children of Nazareth. When his master looked upon him, he loved him, and stroked his curly hair, and called him a good boy, and he should learn

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his a-b-c's. So he began to show him *aleph*, the first letter of the alphabet. 'But why is it called *aleph?*' said the boy. 'Ask not vain questions,' replied his master, kindly; 'but proceed with the next letter, *beth.*' 'Not so,' said Jesus; 'I must comprehend the first; for God maketh nothing in vain.' Then, taking all the letters in order, he expounded unto his master the significations of all their forms.*

The legend does not inform us what this divine communication amounted to. But there is an Armenian version of it which gives us some idea of what it was. 'Behold,' said Jesus, 'how this letter A is made: the three upright strokes signify the three persons of the Trinity; and the stroke which underlies them signifies that these same three are one.' To comprehend this part of the legend, however, we must notice the shape of the letter in Armenian (Fig. 14, p. 240). We must remember then that this legend dates not merely from Christian days, but from a time subsequent to the Athanasian and Arian controversy. It was an Athanasian accommodation of the old Arkite trinity to the new controversies of the 4th century of the Christian era. But it was no mere monkish or scholastic whim. It had the essence of the old truth in it. Different as it looks, this strange-looking Armenian A has a form which, when critically studied, is essentially identical with the Cadmean A, the posture of the form only being varied, as I shall show directly.

I must here say, that one of the most remarkable circumstances connected with the tradition of the alphabet is the apparent indifference which the sculptors and scribes who invented the letters exhibited as to whether a letter stood upright, or leaned to the right, or to the left, or lay upon its side, or was turned topsy-turvy so as to stand upon its head. We are not to suppose any greater nicety in writing, nor any greater difficulty in reading what was written five thousand years ago than now. No doubt many an ancient scribe learned to write as badly as Rufus Choate; or as that superintendant of the Michigan Central Railroad, whose angry letter of remonstrance and warning about keeping his cows off the track was used by the

* Norton, Vol. iii. p. 270. Discussion of the Marcosian sect of Gnostics (W. 54, 2).

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farmer to whom it was addressed, as a free-ticket on the line for a year.

But there was a far better reason for this indifference than carelessness, or that familiarity which breeds contempt. If the earliest letters were pictorial symbols, it did not much matter how they stood, provided the form which conveyed the idea was kept clearly before the eye. If any one out of several possible postures became a specialized and permanent variation, it was because that posture of the form could be also made as symbolical as the form itself. Such was the case of the *arm*. It was only when the arms were stretched upwards, with the palms open, that they could typify adoration, praise, admiration, holy rejoicing, and the like. You see it thus expressed in the 93rd ideograph of Bunsen's list (Fig. 7, p. 235). Its sound was *haa;* its meaning 'to rejoice;' and also the number 100,000,000. It was used like the Chinese exclamation of astonishment, *Hai-ah!** To apply this symbol of veneration or astonishment to a special subject, such as *time*, some addition had to be made to the symbol. A *feather* (which meant *history* and *truth* and *antiquity*) was placed upright upon the centre of its head, and then the symbol meant *one hundred million years*, or in other words, an astonishing length of time.

But when the arm was not used to express this *a! of astonishment* or *veneration*, but merely the sound *a* as it issues in a simple and unimportant manner from the mouth, or as pronounced at the end of words, and through the nose, like the *on* and *m* final of the French, or like the nasal and final double *aa* of the Hebrew—then the arm was engraved in a horizontal position, at the bottom of the word. We see it, for instance, thus in that bilingual inscription of 'the great Emperor Xerxes,' upon an alabaster vase in the cabinet of antiquities in the Royal Library at Paris (Fig. 8), which has played as important a part in the discovery of the lost key to the ancient Assyrian or Cunei-

* The 94th, 95th, and 96th ideographs are variations. The arms and neck alone, when used with the eagle (A) as a complement (Fig. 7), signifies the letter K, or sound KA, as in *kam*, black; *skai*, to plough; *kaut*, to build; *Ka*, a bull, goat, to receive; *mfka*, copper; *tka*, a spark, &c. Lamb thinks that it is the Hebrew ⊓ turned upside down. See Bunsen's Phonetics, p. 562, vol. i., Egypt.

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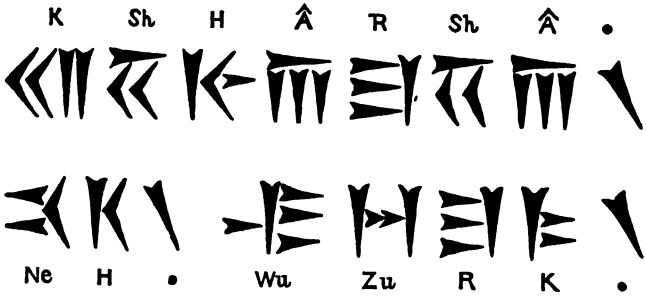
Figure 8.

Bilingual Inscription of Xerxes, on an Alabaster Vase, in the Royal Library at Paris.



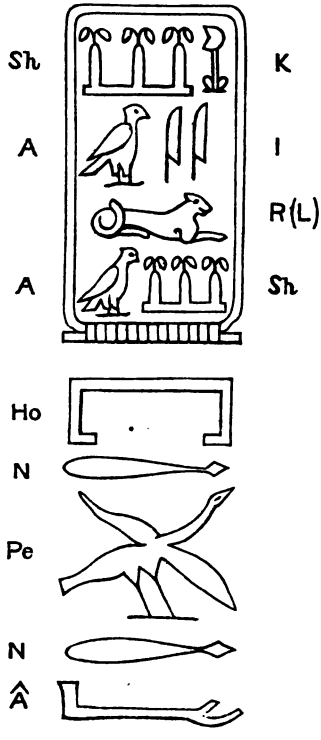


Fig. 7.

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form writing, as the more celebrated trilingual inscription commonly known as the Rosetta stone had previously played in Egyptology.* In the upper horizontal range of characters, the two letters Â, and the two letters S, were at once seen to correspond to the two letters A, and the two letters Sh, in the hieroglyphic group in the cartouche below. In the art of reading a correspondence written in cypher, *c'est le premier pas qui coute*, a right beginning is all you want. Get one or two letters of the alphabet, and the rest follow as obediently as a skein of thread when you have found the right end. But the hieroglyphic A here is represented by an eagle. The Egyptians had, in fact, three hieroglyphics to express this sound—the single feather, the arm, and the eagle. The *feather*, as I have said, standing for the initial long AA of astonishment; the *arm* standing for the final nasal *ⁿaa*; and the *eagle* standing for a sort of gently aspirated *ʰa*, which there is no need to allude to farther.

Now what I wish to fix your attention upon is the shape of the Cuneiform or Assyrian letter A in this inscription. Remember what I have been saying about the apparent indifference of the ancient scribes to the position of the letters, provided the form was what they wished it to be. I do not here allude to the position of the letters in respect to one another in the word; although that, too, is a very important point, to which not half enough attention has been given in the science of language. For words were written indifferently backwards and forwards; the old Greek inscriptions are written alternately backwards and forwards, from line to line, as a field is ploughed by farmers; and they actually called that mode of writing, 'boustrophédon,' that is, 'oxen turned.' And you see that in this cartouche the Egyptian scribe has done the same thing. The fact is, if *carving* the letters preceded the *writing of them with a pen*, as it probably did, the necessity for using a pushing or striking force coming from the right hand is apparent. Nothing can be more awkward than

* See the account of its discovery by St Martin, and its complete discussion, in G. Pauthier's '*Essai sur l'origine et la formation similaire des écritures figuratives chinoise et Egyptiens.*' Paris, 1842. Part I, p. 124, *et seq.* 'Kshhârshâ Neh Wuzurk=-Kshairsha Hon Pe Nâ=Xerxes the great Emperor.'

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writing the Hebrew or Arabic letters; but nothing is easier or more convenient than engraving them, commencing each letter from the bottom right-hand corner. The Chinese write from the top of the line downwards. On the contrary, the county land-surveyor, now-a-days, writes his field-notes upwards, from the bottom of the page to the top. All this has caused many dialectic variations in the words of cognate languages, which have greatly puzzled philologists; e.g. the Hebrew KOL, a voice, is in Greek LOGOS; the Greek gala, milk, is in Latin LAC; and if I had time to go through the whole alphabet with you I would have to use this law of inversion to explain many things; as e. g. how the Theb, or ark of Noah, came to be pronounced Beth, the second letter of the Shemitic alphabet, and Bath; meaning both a house or temple, and a daughter, or the virgin goddess of the temple.

But my object in this course of lectures has been rather to state principles, to describe methods of thought, than to cram the imagination with detailed facts and subordinate results; and I keep to the discussion of the letter A, not for the sake of any special pre-eminence that it may have, but as affording a good example of the method which governed the alphabet-making mind of antiquity.

You see, then, that the position of the form of the letter itself, that is, its *posture*, was so variable that it could be laid upon its side, and turned over upon its head, apparently without inconvenience. Mark me, I say *apparently*, not *really*. Those old wise men knew what they were about. Their fancy was as dogmatic as our logic, and loved etiquette and punctilio as well as our natural science does. If the old Assyrian scribes wrote the letter A thus with three upright strokes and a fourth stroke laid across *on top;* and the Armenian scribes, many centuries afterwards, saw fit to reverse their letter A thus , that is, three upright strokes and a fourth laid *underneath*,—they certainly had some dogmatic reason for doing so. And the Marcosian legend of the little Jesus tells us what that was; 'to teach us,' said the little master, 'that the beginnings of all things is one essence in three persons.' But why would not the stroke, when drawn *above*, do as well as when drawn *below?* The Egyptians expressed the emanations from the sun, *sunlight*, by three waved lines descending from a circle

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surrounding a dot; and the ancient Chinese expressed spiritual emanations, *spirit, genius, genii,* by three strokes beneath a fourth horizontal stroke. And although this figure received another small horizontal stroke subsequently, its meaning remained the same, and has been considered so important, that it forms the key to an entire class of Chinese words, viz. all those which relate to the spiritual intelligence of mankind, the power of expressing thoughts in words, the power of giving names to things. Its ancient and its modern form are both given in Fig. 9 below. It is called *chi,* and means *monere, significare, præcipere, ostendere, respicere, docere, per scripturam significare.**

But the Athanasian theology was not so easily satisfied; it had a certain technical expression to employ, viz. 'the *hypostatical* relation of three persons in one God.' If you look in Greek dictionaries for the word *hypostasis,* you will be rather astonished to see no theological allusion whatever in its meaning; for it stood to the Greek farmer for nothing but *wine lees.* It meant simply what our chemists would call a *precipitate.* But it was made up of two words, —*hupo,* under, and *histemi,* to stand; and its original meaning must have been *something fundamental,* or *at the bottom.* Angry theologians got to hurling this word at each other's heads with this older meaning, which perhaps it still retained in the learned world. The hypostatical union of the three Divine persons meant their fundamental union, their personalities rooted in a common underlying substance or substratum. The Scribes could do no less than the Pharisees. The letter which had come down to them from Assyrian days, bearing its Arkite signification of *eternity* and *divinity,* the beginnings of things and the stuff of the world's phenomena, suited their purpose exactly, provided they took the fourth stroke, which joined the tops of the other three, and put it below, making it *hypostatical,* or *fundamental.*

Going back now to the Cadmean or Alpine form of the letter A, will you demand that I bring it into similar relationship with the Armenian and Assyrian forms? The demand would be just if I asserted that the Cadmean idea

* French Dictionary, p. 489. Also see the 113th Key, Kij.

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of the letter was precisely the same as the Assyrian or Armenian idea of it. But all alphabets were not made in the same age, nor by the same people, nor under the same set of influences. All I wish to hint this evening is, that, taken as a whole, and in the earlier ages of literature, a general Arkite mythology governed the fancy of men and therefore shaped all their attempts at expressing their religious and historical ideas, both in architecture and in writing; and that the traces of this mythology exist under all modifications of the forms of letters in all alphabets even to the present time.

The origin of the curious *wedge form* of the Assyrian letters has not been explained. The scribes who wrote the archives of Nineveh and Babylon upon clay cylinders could have made their lines or strokes as straight and smooth as the Romans, who wrote on wax, made theirs. Letters made with such skill and care that they cannot be read sometimes without the help of a magnifying lens (a proof, by the way, that the lens was two or three thousand years older than the time of Galileo), show that the writers could do anything in the way of neat writing, and that they must have been inspired with some special reverence for letters made with strokes in the shape of a wedge, or rather *arrowhead*. Now Layard has figured, among other things found in Assyria, an altar on which reposes a gigantic arrowhead, half as large as the altar itself,—as large in proportion, in fact, as a sheep or a calf would be if laid upon the altar. Lying thus upon the altar, it must be considered as a sacred object, offered to some God. Or, if the altar be merely a pedestal, then the arrowhead must be regarded as a divinity. But the arrowhead is just the shape of the Cadmean letter **A**; is Alpine in the Arkite sense; was used in divination; carried the great hyperborean Druid Abaris, in Greek fable, on its back to Delphi; and was as appropriate an offering as the fir-cone, or as the little pyramid held in the open palm of the Egyptian priest. What connection may hereafter be traced between this worship of the arrowhead in Mesopotamia and the use of flint weapons by the people of Central Asia, in the Stone age, I will not venture to conjecture. It is enough for my present purpose that the construction of the Assyrian letters out of arrowhead-shaped strokes,

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gave them a peculiar sanctity or significance in an Arkite sense, and converted them all into Alpine hieroglyphics.

Confining ourselves therefore still to this Alpine or pyramid symbol, let me ask you how an ancient scribe would be likely to make a letter out of it. Would it not be in one of these four ways? 1. If he worked in a Chinese spirit, scorning perspective, he would use four diverging strokes to express its four sloping angles. If he were a true artist he would use three diverging strokes, the middle one perhaps a little on one side for the sake of perspective. If he were a literal fellow he would use two strokes and be satisfied with that. But if he were a transcendentalist he would use but one vertical stroke to represent the essential idea of isolated height.

Neglect the first form as too absurd for any body but a Chinaman, and the last also as too transcendental to have come into vogue until the refinements of later ages produced the obelisk out of the pyramid, and the obeliskal letters out of the pyramidal, it remained for the common Alpine letter to be made of either two or three strokes, joined of course at the top. Look now at this series of ancient Cadmean letters, of which No. 1 is from a Greek boustrephedon inscription, the fourth is Phœnician, and the rest are antique Greek.

1 2 3 4 5 6 7 8 9 10

You will perceive how the original form came to vary so much that there is in some cases now scarcely a recognizable trace of its original intention. Look, again, at the initial Sanscrit A, No. 11, of the following forms; and

11 12 13 14 15 16 17 18

when you remember that all Sanscrit letters are hung upon a sort of clothes-line and boxed up by vertical strokes, you can see how the essential three divergent

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lines of the pyramid may come to form the cuneiform letter, No. 12; and, finally, the Armenian letter, No. 13.

But there are still simpler pyramidal forms for the letter. The Runic A has only two strokes, No. 14; and so had some of the Roman forms of the time of the Christian era, Nos. 15, 16, as well as the Mœso-Gothic, No. 18.

But there is an Irish form of great antiquity, used extensively in Europe, which has a peculiar significance, No. 18, formed of an horizontal stroke across the summit of two others. By reference to this upper stroke I think we reach a complete understanding of the Arkite ideas of the early alphabet-makers. But to make this clear I must speak of another element of alphabetic writing, the water-symbol.

19 20 21 22 23 24

The Egyptian hieroglyph for water was three horizontal waved lines, often reduced to one. In process of time this became merely a straight horizontal line. Out of this Egyptian hieroglyph the Greeks made their sharp hissing *x* (Ξ, ξ), and the Assyrians their cuneiform S, No. 21. The early Greeks made these lines waving like the Egyptian, but the classic Greek alphabet converted the waved into straight lines. The Greeks and Romans used the same Egyptian water-symbol for the simple sibilant *s;* but they stood it up straight, No. 22; because water never hisses except when it rises in a jet or falls in a cataract. When they desired an alphabetic letter to express the *murmuring* sound of water as upon the sea shore, they preserved the original horizontal posture of the symbol; and hence our **MM**s and **NN**s. The most ancient Egyptians did not recognize in their alphabet the *hissing* sound of water: it would be difficult to say why, unless it might have arisen from the scarcity of rain and mountain-torrents, cascades and jets, in the valley of the Nile. It is a curious fact also that they employed their water-symbol for their letter N; whereas for M they chose the figure of an owl.

These two sounds of water are recognized more or less

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distinctly in all human languages. For instance, in our own English we have two names for the great and little waters of the earth: the former we call the *Main*, as the Hebrews called it *Mîm*. The latter we call *Seas*. In eastern mythology the name of the hundred-headed sea-serpent on which Vishnu sits is in Sanscrit *Shi-shi*. The name of the Syrian Noah was *Xisuthrus*.

The soft hissing sound of Z in Italy had the same water form. The dental sibilant of the Greeks, Θ, was originally represented by the Egyptian zig-zag waterline surrounded by a circle. It was reduced afterwards to a line, and finally to a point or dot. In Arkite symbolism this letter had a special function in signifying things surrounded by water. Thus holy Mount Athos received its name, AΘ, because the A represented a mountain, and Θ signified that it was surrounded by the sea.

Let us return once more, carrying with us now this water-symbol, to the discussion of the letters that were founded on the mountain idea. The diluvial mountain could be represented in three ways: either in the air, or partially submerged, or wholly submerged; in other words, the water-symbol line could be drawn across it at the bottom, in the middle, or at the top. The first would make the Greek letter delta, Δ, the simple mountain TOL or TOR,—our letter D. The second made the Greek letter alpha, A. The third gives us the Irish and Gothic letter *a*, No. 18 above. The Runic alphabet of northern Europe adds additional confirmation to these facts, by giving a pyramidal form to its letter *t*, the equivalent of the Greek *d*, and by calling it by the same name Tyr.

Finally, to show the connection of the pyramid and obelisk in alphabetic forms, as in architecture, it is only needful to contrast the A and T (or D) in respect of this horizontal waterline, with all the other letters. These are

25 26 27 28 29 30 31

the only two letters, carrying the waterline, in the old cuneiform alphabet; just as they stand apart from all the others in the Cadmean alphabets of the west, in carrying

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it; as may be seen in the following series. The *dj*, No. 27, and *sh*, 28, are no exceptions, for they are evidently subsequent modifications of the older simple *d*, No. 26. Nor is it less a significant fact that the only other letter besides *a*, made with three vertical strokes, is the letter *th*, No. 31.

I could adduce still a number of other instances * of the essential similarity between these two letters. But I have already far transgressed the extent to which I had intended to carry the illustration of the subject. As I said at the outset, it is impossible to do more than to give you some idea of its richness; and to suggest a method of investigation which will be likely to yield the best results.

Each letter of the alphabet might be taken up in its turn, and its original mythological significance developed by comparison with other letters in the same alphabet, and other forms in other alphabets. For instance, the liquids L and R were used to represent the flowing of water, sliding and slipping actions, continuance, and all that class of ideas. Mythological explanations come in everywhere. Rhea, the goddess of the flood, from ῥειν, to flow, and geographical names like Rhine and Rhone, are good illustrations. Invention, design, the regulated fancy of a learned caste, appear at every step. The natures of the letter-sounds were critically studied, and ingeniously applied, as in the Greek word αει, (always) constructed out of vowels, in a definite order, so as to express *continued existence*.

In a word, words were designedly built up, by the old scribes, by placing the letter-symbols in all sorts of well-devised positions and relations to each other, until the Arkite fancy was exhausted and satiated with its work or play; and then fresh crops of Arkisms took root in these strange compositions, and new series of fables sprang from them again to delight the taste and feed the venerating instinct of other generations.

But before bidding adieu to this whole subject, to pass to quite a different one in the next lecture, I must say a word respecting the history of the growth of the more ancient alphabets.

The history which Chinese scholars give of the growth of their own language is precise and authentic,

* See A. 2. 16.

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although their literature will not compare for antiquity with that of Egypt. The most ancient book they have, is supposed to have been written somewhat more than 1000 years before Christ, that is, before the time of King David. It is called Y-King, or *the book of transformations*. In a supplement to it called Hi-thseú, edited by two learned Chinese of the 11th century before the Christian era,* we find this account of the origin of Chinese writing: 'In old times Pâoi or Foŭ-hi governed the world; and lifting up his eyes, saw figures in the sky; and casting down his eyes, saw models of them on the earth, in the forms of birds and beasts, and in the proportions of the earth. From these near and distant objects he began to trace out the eight symbols (kouá), to penetrate the meaning of the divine intelligence, and to classify therein the properties of things by genera.'

An ancient commentator upon this book explains that the fundamental distinctions involved in this classification were those of the *fixed* and the *mobile*, the *resisting* and the *yielding;* which correspond very well to the western *mountain* and *water* symbols. He adds that the generic figures were those of lakes and mountains, wind, thunder, &c. He then goes on farther to explain that Fo formed his letters by six rules. By the 1st he imitated the objects themselves; by the 2nd he combined these imitations into groups; by the 3rd he inverted their meanings; by the 4th he invented determinative marks to express accidents, 'high and low,' for instance; by the 5th he gave his letters metaphorical meanings; by the 6th he showed by letters the sounds of things. Pauthier names these six classes of letters: 1. The Figurative; 2. The Qualitative; 3. The Composite; 4. The Polar or Antithetic; 5. The very numerous class in which an image of the object is given, and with it another character to express the sound of its name; 6. The Abstract or Figurative. He gives five or six characters as examples of each class, from which I select but one, to show the plan upon which it was constructed, and the change its shape has undergone in course of time.

* Wén-wăng and Tcheoû-Koung; see Pauthier's Essay, page 3, et seq. The commentator takes occasion to remark that before Fo's time men employed knotted cords in the administration of affairs.

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For example:—

1st Class, Imitative. the sun: now written

2nd Class, Qualitative. morning: „ „

3rd Class, Composite. (sun and moon) light: now written

4th Class, Polar or Antithetic. left; right „

5th Class, very numerous, Image and Sound combined. chi spirit, genius from on high: „

6th Class, Abstract, or Figurative. heart, i.e. soul: „

In Fig. 9 above, No. 1 is the Sun, represented as on the Egyptian hieroglyphics, by a disc with a dot in it; 2. Morning, by a solar disc above a horizon line; 3. Light, by the two figures of the sun and moon combined; 4. Left and right, by two tridents with curved handles, pointed different ways; 5. Spirit, or genius sent from above, by three slightly waved lines depending from a horizontal line, meaning the sky; 6. Soul or affection, by a heart. Many other and finer examples might with a little care be selected. The best description I have seen of the figurative cunning of the inventors of the ancient Chinese characters is in H. Noel Humphreys' History of Writing. Take, for instance, the three signs following:—

folding doors; ear. listening; mouth. asking a question.

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Or these:

singing bird; sunshine; obscurity.

bird. tree.

The passage of the figurative into the phonetic is accomplished under class V. by a union of the two; thus, a duck is not only drawn, Fig 10, but has a character added to express the sound of its name *ki*. A willow is represented by a tree and the phonetic *ki*. A root is represented by a tree, and a phonetic *ken*, &c.

Fig. 10.

Ki Ki Ken

Rude as this method is, it was the one adopted also by the inventors of the Egyptian hieroglyphics. In fact, these phonetic adjuncts are little else than the *matres lectionis* of the Hebrew, in the essential genius of their purpose.

There are some remarkable fables relating to this invention of the great Cadmus of the East, which throws a new light upon its nature. In one passage it is said that Fo got the external forms of things from the heavens, but his *letter-figures* he saw '*upon the picture which issued before him from the waters.*' And this mystic Arkite description of the nature of the origin of letters does not by any means stand alone. It is repeated by other writers, and in other forms, and has no doubt some deep significance. Men whose books are filled with practical wisdom, humour, and wit, shrewd sarcasm and a refined fancy, do not utter what seems the sheerest nonsense, the folly of babes, without a cause.

Lopi, the author of the ancient 'book of itineraries,' writes, that Fohi called his new invention Dragon-writing, because he found it in marks upon the back of a Dragon-horse *which rose out of the waves*. For the same reason all the great mandarins or scribes in early days were denominated dragons. It will occur to you at once that Cadmus, whom the Greeks considered the inventor of the alphabet,

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obtained his colonists by sowing the teeth of a dragon. The hydra, the many-headed dragon of Greek fable, as its name shows, represented the raging waves of the sea. The Chinese word *Shan*, a mountain, is expressed by a character which shows three teeth. The centaurs of Greece—half man, half horse—were the learned men of that heroic age, 'the priests of the mountain,' כהני צור; and their chief initiated Hercules and Achilles into all the mysteries of learning which then were.

Whatever may be the date assigned to the origin of the alphabet, or what the country, the fable still wears this peculiar mountain-water, or Arkite, garb. One Chinese authority, Hoâi-nan-tseù (189 B.C.) asserts that Thsan-hiè, crown lawyer to the Emperor Hoang-ti in 2698 B.C., was the inventor. Another fixes on a somewhat lower date, 2357 B.C. But here again the fable shows itself in a still more perfect form; for the tortoise has always been the living and walking symbol of the Tor, the Druid under his tumulus; and therefore the Indian mythology piles the earth upon the elephant and the elephant upon the tortoise. The great sea-tortoise especially, seen with his back above the waves, struck the ancient Arkite imagination with transcendant admiration. So the story goes that the Emperor Yao, in the year 2357 B.C., began to trace letters in imitation of the characters which he noticed on the *back of the divine tortoise*, which was brought to him by a barbarian family from the far south. This tortoise was three feet wide, and a thousand years old; and on its back was written, in Kho-teau characters, *the whole history of the world from its beginning*. The land of the south may have been India, or Mesopotamia, or Egypt, for all that we know to the contrary. A similar, but long subsequent, arrival of learned strangers, about 1110 B.C. (a date not very far from that of Solomon's commerce with Ophir, by the way,) is mentioned in the Li-tai-ki-sse.*

After describing the dragon-scrip of the most ancient times, and the tortoise-shell alphabet of the 24th century before Christ, the Chinese historians go on to tell us that during the Han dynasty, i. e. from 2205 down to 1766 B.C., the people got used to writing a third, but also extremely

* Pauthier, p. 10.

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ancient, kind of characters, such as are seen on bells, vases, and tripods preserved in the present museums and palaces of the celestial kingdom.

When the Tcheoú dynasty came in, before the time of Solomon, 1134 B.C., its founder introduced a new modification of the alphabet, called the *bird tracks*, Niaó. Soon afterwards, that is, under the Wén-Wăng dynasty, 1110 B.C., the *fish-gambol* characters, Nu, came into vogue, and every kind of polite learning got systematized. It was at this time that the sage Pao-chi invented the five rules of politeness, the six kinds of music, the five methods of archery, and the five styles of horsemanship; and fixed for all succeeding times the six styles of writing, as now recognized by all Chinese scholars.

In 221 B.C. Li-sse, at the emperor's command, invented the small *tchouan* writing; but it was rejected except for the royal signets; and then he invented the *ta* or great *tcheuen* writing, a most artificial and fantastical form of character, wholly different from those that had been in use, viz. under the Tcheoú dynasty, 880 B.C., which scarcely differed from the Kou-wen, or ancient figurative forms, in which the six Kings, &c., of Khoung-tseu and the great Commentary of Tso-kieov-meng were all written.

Then came the dissolution of the Empire, and the rise of the great heptarchy of independent provinces, which caused local modifications of the characters chiefly due to differences in artistic taste. One of these provinces, the easternmost, ruled over by a dynasty called Han, had wisdom enough to throw overboard the whole literature of the past, and attempt to open for the national mind a new career.

Once, only this once, in the history of this strange nation, there seemed a chance of the establishment of that tremendous power in letters which changed the face of the intellectual world in the far west; I mean a pure phonetic alphabet, such as gave Greece its empire over thought, and Rome its empire over society, and Palestine its throne of grace and worship over Christendom. Even Egypt knew enough to adopt a demotic or current hand. The number of Chinese characters amounts to 80,000. The whole number of Egyptian characters in Champollion's Dictionary is but 749. Those which modern science is content to use,

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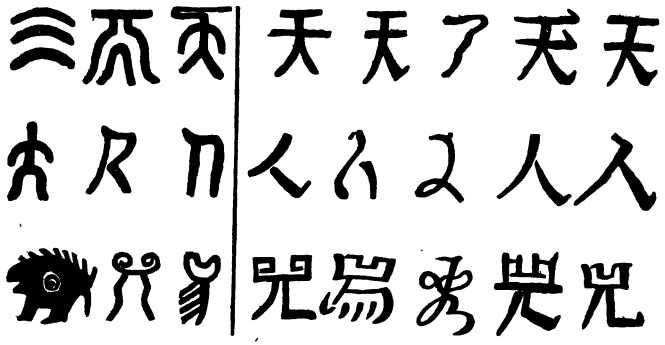
even including all the mathematical, chemical, and other signs, would not amount to many more than a hundred. What China would be now, had the invention of the bold and easy cursive hand-writing been adopted by the Han dynasty, in A.D. 76 to 88, no one may say. But the purely phonetic 'bureau hand,' *t'sao*, as it was called, would probably have set the soul of China free from the incubus of its strange, fossilized, monosyllabic, uncompromising characters, which weighs the future down for ever under the load of all the past. But the experiment did not succeed. The emperor, Hiáo-hô-ti, in A.D. 89, while John was writing his great Gospel, annulled the new invention on the ground that it disturbed the public education, and ordered a return to the culture of the ancient hand; on which his head grammarian, Hiu-chin, immediately composed a treatise in 40 books, which sealed the fate of China to the end of time. The Chinese characters now in use have certainly not varied in shape since the year 618 of the Christian era.*

But to show how they have varied since the invention of letters by Fohi, I take from Pauthier the following



specimens of the three ancient styles, called: 1. the *Kouwen*, of the highest antiquity; 2. the *Tá-chouen*, of mean antiquity; 3. the *Siao-chouen*, of low antiquity; followed by, 4. the *Li-chou*, or bureau character; 5. the *Hing-chou*, common or current hand; 6. the *Thsao-chou*, cursive hand; 7. the *Kiai-chou*, square seal character; and, 8. the *Kiai-hing-chou*, or current hand, all of more modern age. Fig. 12 gives the original *Kouwen* characters

* Pauthier, p. 21.

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for 'heaven,' 'man,' and the 'savage beast ssé,' followed by the modifications of form to which they were subjected, corresponding to the other seven styles of writing, successively coming into vogue during the four thousand years which have elapsed since the reputed age of Fo.

It is only by tracing the forms of the Chinese radicals back through their various transformations to their original, that any comparison with the Egyptian hieroglyphs can be made; but when this is carefully done important analogies are discoverable. The classification of ideas common to both eras has been made upon a common principle, which was, in fact, to be expected from the very constitution of the human mind. But in some instances forms are also common to the two systems, establishing some actual historical connection between the two, such as is hinted at by the legends cited above.

Figure 13 gives the twenty-two* characters which the priests of Egypt invented for determining the class to which any particular hieroglyphic belonged, when its pronounced or written name would not of itself show. The modern alphabetic writing has done away with the necessity for such a rude device, but originally some such

* Pauthier's Essai, p. 103. Uhlemann gives thirteen, on the authority of Ideler, based on Champollion. Bunsen's list is more extensive.

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method was indispensable. For instance, the difference between *sheep* and *ship* in English is made in writing by using in one case two vowels *e*, and in the other one vowel *i*. But in the absence of vowels it would be necessary to add to the word *shp* some sign, in the one case a rude picture of a boat, and in the other case a rude sketch of an animal. This is precisely the mode in which the Egyptians used the following determinative signs, standing for—1. all names of gods; 2. of goddesses; 3. of men; 4. women; 5. members of the body; 6. quadrupeds; 7. birds; 8. reptiles; 9. fish; 10. trees; 11. plants; 12. metals; 13. stones; 14. edifices or habitations; 15. places; 16. stars; 17. divisions of time; 18. fluids; 19. things noxious or ecclesiastically impure or unclean, represented by a sparrow; 20. scripture; and 21. actions.

Under these I have arranged a selection from the whole list of over 200 Chinese radicals, such as represent the same ideas, by equivalent denominative signs. These are named in Chinese: 1. Kŷ (Radicals, 113, 119, p. 489 of the Great French Dictionary); 2. Mŷ, p. 534; 3. Jin, 9, p. 8; 4. Nùu, 38, p. 138; 5. Jŏ, 130, p. 587; 6. Niêou, 93, p. 398; 7. Niào, 196, p. 899; 8. Tchong, 142, p. 655; 9. Yû, 195, p. 891; 10. Mŏ, 75, p. 288; 11. Tsao, 140, p. 615; 12. Peh, 154, p. 724; 13. Chŷ, 112, p. 478; 14. Miên, 40, p. 145, and Yèn, 53, p. 177; 15. Kīn, 167, p. 793, Y, 163, p. 779, and Feòu, 170, p. 818; 16. Chin, 161, p. 765; 17. Jŷ, 72, p. 274; 18. Hò, 86, p. 380; 19. Choùy, 85, p. 343; 20, 21. Yŭ, 129, p. 586; 22. Hing, 144, p. 672.

The principal alphabets to be studied are the Punic; the still but partially understood Italic or Etruscan group; the Phœnician, Samaritan, Himyaritic, Arabic, Hebrew, Coptic, and Amharic; the Armenian; the three extremely ancient cuneiform alphabets; the Davanagari and other alphabets in India; the Thibetan; the Burmese, Siamese, and Singalese of farther India; the Japanese, and the Corean. They are all different at first sight from one another, and some are comparatively modern. But when critically studied they are all found to be allied more or less distantly. Of all these the Corean is the most perfectly regular.

Our own alphabet, derived from the ancient Cadmean,

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is theoretically reducible to four or five letters, representing that many classes of sounds:

Vowels.	Labials.	Gutturals.	Dentals, &c.
A	B	C	D
E	F	G	H
I		K	L
	M		N
O	P	Q	R S T
U	V W	X	
Y			Z

A mere glance at this scheme will show that the letters of the alphabet were not placed fortuitously in their position; that the vowels came in the order of their vocal development; in a word, that the entire alphabet is a fivefold orderly repetition of the first four letters, ABCD, which in themselves sum up the entire range of sounds, and make the key notes to all the dialectic transmutations of letters to which I have already drawn attention more than once before. These transmutations occur regularly only within the respective columns of this scheme. For instance, B is exchanged for F, M, P, or V, but never for C, G, K, Q, or X; nor for D, H, N, R, S, T, or Z. In cases where a letter of one column seems to be transmuted into a letter of another column, as in the often-quoted instances of William for Gulielmus,—German welch for old English quilk,—French garenne for English warren, &c., a loss of some letter must always be supposed, or the substitution of one of the vowels for one of the letters. In the three instances just quoted the initial g is lost:—thus g-william for g-ulielm, q-welch for q-uilk, g-warren for g-(b)arenne.

It is true that in the fourth column are collected dentals, linguals, sibilants, a nasal and an aspirate, but all these are proved to be transmutable by the simple method of comparing a dozen or two of allied dialects. D and T are, in fact, the same letter; L and R are universally interchangeable; S and Z are identical; N is the nasal of D, as M is of B; and H is, in fact, a sibilant in its simplest form, as such words as ἁλς and *sel* show.

Here I must leave this fascinating subject, hardly having taken the first step across its threshold, but only thrown open the door to exhibit the immensity and magnificence of its interior.

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LECTURE X.

THE FOUR TYPES OF RELIGIOUS WORSHIP.

If the views be correct which I have very imperfectly expressed in the previous lectures of this course, we are now prepared to enter upon the last and most important and most interesting subject connected with the early history of man—the origin of its mythologies.

It will be necessary to keep always in view the fundamental distinction between religion and worship. Religion is the soul of worship. Worship is the body, the phenomenal form of religion. The religious life of man consists of a combination of three of his elemental forces,—Admiration, Love, and Fear—having for their object of activity the invisible or superhuman world.

As there are four great types of organic animal life, represented by the Articulate, Radiate, Mollusc, and Vertebrate kingdoms,—so there are four great types of this religious life, embodied in the Worship of the dead, the Worship of the powers of nature, the Worship of God in heaven, and the Worship of the universe.

Under these four heads all human conceptions of the divine as worshipful can be collected. In one sense they are four successive stages in the order of the development of the human intelligence governing the exercise of the instinct of worship. They are not only philosophically consecutive in the order of nature, but to a certain extent also historically consecutive in the order of time. They have co-existed in some ages, and been combined and intermixed in some countries; just as in the case of the four types of animal life. But they have virtually followed each other in ruling the world; just as, in the succession

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of geological ages, Radiates had their *maximum* development first, Molluscs next, and Vertebrates last of all.

For it will not do to affirm—drawing sharp lines of distinction—that in the ages of man's first appearance on the planet there was no other worship than that of their dead parents, or of the manes of their heroes; that everywhere there followed Fetichism, or the worship of the powers of nature; that then in later times all nations attained to the higher worship of some Fate, or Jove, or God of Heaven; and that finally, in these last times, a genuine Pantheism has grown universal. Far from it. Complex enough have been the combinations of religious ideas as far back in history as we can see. Varieties of the individual, co-working with varieties of race, and with the various stages and kinds of civilization, have kept, not only alive, but in full vigour, the worships of the past, side by side with one another, and with the higher worships of the present day, developing, in fact, their four great types in four parallel lines; just as, in the growth of the whole animal kingdom, we notice that Radiates and Articulates lived together in the oldest sedimentary rocks, and are represented still in the multiform fauna of to-day; while Molluscs and Vertebrates, from the time when these appeared, have been mixed in with them through all the higher and later sediments.

All that we can affirm, therefore, is this;—that the earliest times of mankind seemed to be stamped with the forms of ancestral worship chiefly, some of which have lasted to the present moment;—fetichism of all kinds—stone worships, mountain worships, water worships, fire, air, and sky worships, Sabæism, Mithraism, Indraism, and the astrological systems of the ancients, flourished chiefly in a second age, but have also lasted to our day;—then the cultivation of the *Taste* by idolatry, and of the *Sentiments* by mysticism, produced at the beginnings of historic times, grand, dominating, ceremonial worships of a god supreme, Jove and Jehovahism, culminating in Christianity; and that, finally, the culture of the *Intellect* has developed Pantheism.

When circumstances favour their growth, all these types are developed in a single nation, in a single individual; but they come to consciousness in this one order only.

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Their consecutive development has been realized in all the cultivated portions of the great historic section of the race. Pantheism has expressed itself in the Hindu Vedas, and in the Christian writings; by Plotinus the Pagan, and by Spinoza the Christian; by Swedenborg in one characteristic form, and by Hegel in another. On the one hand, children and savages cannot be Pantheists. On the other hand, philosophers like Ralph Waldo Emerson and Blanco White, historians like Buckel, naturalists like Von Baer, were equally impossible in the Stone period. There is a time for everything under the sun. Ages may overlap. One nation may outstrip another in its religious development. One race may hurry forward from Fetichism to Pantheism with greater intellectual vivacity than another; but he who aspires to be the historian of mythologies must learn to recognize, or have the genius to construct, out of the apparent confusion which has thence ensued, some wide, consistent, ever-working law of growth, some comprehensive system of religious development residing in the very nature of the common mind of man.

If now there be four types of religion, there are also but four modes of worship. I use the word here in a more precise and restricted sense. The religious sentiments of man, intelligently directing themselves towards any one of the four great objects of adoration, embody themselves in four forms of worship. In other words, all the religions of the ages have become incarnate with four members: Prayer, Praise, Offering, and Sacrifice. They correspond to the instincts of religious Fear, religious Love, religious Policy, and religious Conscience, or the sense of justice. And they have filled the world, for ages upon ages, with cries, and songs, and gifts, and altar-smoke.

As worship is a body for the spirit of religion, so ceremonial is the dress which these four kinds of worship wear. Ceremonials are merely special shapes and combinations of prayer, praise, offering, and sacrifice, devised by the clerical imagination, localized by circumstances, and sanctified by long tradition.

In common parlance we speak of ceremonials as religions; and we class men rudely by them. There could not be a more unphilosophical mistake. An ethnologist might as well attempt to classify the races of mankind by the

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fashions of their clothes. No two kinds of ceremonial, for example, could be more unlike than that of the Romish Church on the one side, and that of the Quakers, Puritans, Methodists, or Moravians on the other. And yet if we analyze the Papist and the Protestant with equal scrupulosity and skill, we shall obtain what chemists call 'allotropic elements' in both. What is Protestantism but melted sulphur dropped into cold water? or, if the *amour propre* of my audience demand another simile, red phosphorus, innoxious to the manufacturers? In the Romish communion you have Calvinist and Arminian, Jansenist and Jesuit, Rationalist and Mystic, just the same and just as eager as in the Protestant communions. There is not a spiritual distinction with which intercourse and literature have made us familiar, that we cannot discover (of course, with intellectual modifications of expression, due to various culture,) in all the religions of the modern world.

Nor is the rule confined to them. The same is true of the ancient mythologies. Under a ceremonial Joseph's coat of many colours, they present a grand simplicity of essential symbolism. But the fourfold distinction of religious type remains; and combinations of the four modes of worship in each type are there. The mythologist must not allow himself to be cheated by the variety of ceremonial details. The confusion of priesthoods, and mysteries, and creeds, and fables, is only in appearance and in words, not in reality—only in the visible organizations and local establishments of the worshippers, not at all in the fundamental ideas that inspired and regulated their worships. Let us look at these—

I. The worship of the dead.

I have said so much on this subject in previous lectures, that nothing remains but to place it in its true relationship of precedency to the other forms of religious thought and conduct.

If it were necessary to add anything to the testimony which the Egyptian tombs of the first six dynasties afford to the extreme antiquity of ancestral worship among the more civilized nations at the dawn of history, we would find such additions in the mention of it in the hymns of the Rig Veda, the oldest literature of southern Asia. The laws of Menu speak of it as the most ancient religion of

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mankind. Long after Brahmanism had substituted for the idea of immortality the doctrine of Metempsychosis, the custom of the *sraddha*, or funereal repast, continued to be kept; rice, milk, roots, fruit, were furnished regularly to the departed soul. The Greeks and Romans, and in fact all branches of the Aryan race, sacrificed periodically at the tomb.

So universal were these rites, that De Coulanges thinks himself justified in basing upon them his theory of the Family Law of the ancients. The stranger was excluded. The dead accepted service and homage only from his children and descendants in direct succession. 'The dead,' says Lucian, 'who has left no son, receives no offerings, and is exposed to a perpetual famine.' So long as the family supplied their head with what he needed in the other world, so long he was its god and benefactor. The living needed the dead, the dead the living, equally. This mutual tie produced the solidarity of the family, the clan, the tribe.

But from this service women were excluded. The hearth became an altar; the son became a priest. The daughter was always a servant—first to her father, then to her brother, then to her husband; once married, she passed into another family; marriage was a second birth—the wife was the daughter of her husband. If the dead had only daughters he lost his immortality, became a larva, or returned to earth in another body to obtain another family. 'The extinction of a family,' says the Baghavatgita, 'causes the ruin of the religion of that family.' 'No man,' says a Greek writer, 'knowing that he must die, can care so little for himself as to be willing to leave his family without descendants, for then no one can worship him.' 'If a man die without sons,' says the Mosaic law, 'let his brother marry his widow, and procure him children.' 'By children,' says the law of Menu, 'a man acquits his debt towards his ancestors, and secures his own immortality.' The Hindu, who had no son, married off his daughter on the condition, that her first son should be considered as his own.

This was the origin of the custom of *adoption* at a later period. The hereditary rights of property were first established entirely in the interest of this overwhelming re-

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ligious consideration; property could protect the hearth, the tomb, the funeral rites, the immortality. 'Religion prescribes,' says Cicero, 'that the possessions and the worship of each family should be inseparable, and that the care of the sacrifices should always devolve upon him to whom the inheritance belongs.' The right of primogeniture in England is maintained by precisely analogous considerations. The Roman daughter could inherit nothing from her father. The Greek laws forbade the daughter to inherit anything. The common law derived from Rome considers the daughter always as a minor.

The adoption of a son, also, by another man than his father, removed him entirely from his own family, and passed him irrecoverably over to another, as in the case of a married daughter. When the demagogue Claudius curried favour with the populace by causing himself to be adopted by a plebeian, Cicero thundered at him the tremendous rebuke, 'Why dost thou expose, by thine own fault, the religion of the Claudian clan (gens) to become extinct! Athens was but a confederation of families; a number of families formed a *φρατρια*, a number of phratriæ a tribe, and the tribes combined composed the city. The religion of the family retained its integrity long after the religion of the city was formulated in a more splendid shape. The fathers of the families became the *dii Gentiles;* the city had its eponym deities.

So much for the classic literature of the subject. Let us turn back now to far more ancient days, beyond the dawn of written history. Let us study ancestral worship in its first beginnings, preceding all those notions of religious sentiment and worship with which the monuments of the great past have made us so familiar.

That it did actually precede all other kinds of religion seems indubitably settled by the archæological discoveries of the last few years. If the picture of the head of an elephant slightly engraved upon a blade of ivory, broken into five pieces, discovered by Dr Falconer, in company with MM. Lartet and de Verneuil, when they visited together the excavations making at the station of La Madeleine, Commune of Turzac, in the valley of the Vezère, at the foot of the chalk cliffs of Perigord, in 1864, proves that the aborigines of that part of France were acquainted

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with the animal in its living state, although no elephants now live in Europe; — if the bunch of lines descending beneath the throat be sufficient evidence that this elephant which lived among them was no other than the long-haired Mammoth, now entirely extinct, the carcases of which, however, are still preserved in the eternal ice banks of the Siberian coast, enveloped in the shaggy mantles characteristic of the species; *—if another engraving of the head of a true elephant (that is, with almost vertical cranium), done upon a fragment of reindeer bone, found by M. de Vibraye at Langerie-Basse, a station lower down the valley, proves, in like manner, that the elephant, as well as the Mammoth, lived in France at that remote epoch, specifically differing by its narrow oblong ears set forward close to the eye† from both the elephant of Africa and the elephant of Asia as we know them now;—if the picture of a combat of reindeers (in which the attitude of the conqueror is described as of surprising truth) upon a plate of shist, with representations of a stag and doe, a horse, an ox, an otter, and a beaver, upon other materials, all found together by M. de Vibraye, in the diggings at Dordogne and Charente,‡ give us all the proof we should require

* This peculiarity was verified by Mr Adams, in 1799, at the mouth of the River Lina. Troyon, p. 74. Comptes rendus de l'Academie des Sciences, lxi. p. 311.

† Comptes rendus l'Acad. des Sciences, lxi., 21 Août, 1865. The eye itself is represented closed by a finely-cut oblique line in its normal position. The tusks are represented, and the trunk, rather thin, has a length about one and a half that of the head. Were these figures made under the influence of a traditional knowledge of the existence of the animals in a distant part of the world, chimerical characteristics would be apparent, whereas a scrupulous exactness of details has been observed, only to be accounted for on the supposition that the model was before the artist's eyes. And, of course, all doubt is set aside by the fact of the existence of the bones of these animals found in great numbers. Troyon, p. 75.

‡ Mortillet, Materiaux, 1ère Année, p. 109. Troyon l'homme fossile, p. 73. I have myself examined a large number of these relics (in cast) in the cabinet of my friend Professor Desor, and can vouch for the sober truthfulness of the following description of them by Dr Broca;—'One can hardly conceive of men, deprived of the use of metal, able to fabricate in bone, in ivory, in horn, an infinite variety of tools, extremely delicate: to chisel them into elegant forms, and represent by designs graven on the handles of their instruments, figures of various animals; figures which are distinguished by an exactitude and artistic ability truly remarkable. To find, in equal measure, the art sentiment we must

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Fig. 14. Handle of a Dagger, made of reindeer horn, and representing a Falling Deer, found at Langerie Basse, Dordogne, France, 1863.

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(apart from the evidence afforded by the bones of the animals themselves fossilized in the same localities) that they were the contemporaries, the prey, and no doubt the dread of the men who sketched their forms;—if, in a word, such relics of rude skill serve well instead of books to inform us under what conditions the early races of mankind protracted their *material* existence, why should we not expect to get equally significant hints respecting their intellectual and spiritual state?

The question is answered for us by the *funerary grotto of Aurignac*, in the south of France.

A workman making a terrace for a vineyard, in 1852, dug into a talus of loose earth piled against the foot of a limestone bluff, and exposed to day a large stone slab set upright against a small arched opening, penetrating but a short distance into the rock. Seventeen human skeletons, some mammalian teeth, and eighteen little discs of seashell, pierced as if for wearing round the neck, were superposed upon each other, in the little cave. The mayor of the canton was a good Christian but a bad ethnologist; and so he gave orders to have the skeletons buried decently, before any one had a chance to examine them anatomically. Philanthropic, but rather stupid that; considering that these were the immortal relics of the Adams and Eves of Languedoc: and it was a chance, perhaps never to turn up again, for seeing if the story of an Eden could be proved or no. The adventure created no great excitement, and even the new burying-place of these antediluvian remains was afterwards forgotten.

descend innumerable centuries to the best days of Greece. They form a contrast with the gross tracery of Celtic monuments so absolute that, perhaps,—it has been suggested—they have been the handiwork of modern refugees in the caves of the old troglodytes. But who in Europe, since Quaternary times, could design on reindeer bone or horn, the figure of an elephant different from all the kinds now living? This interesting race led a peaceable existence. A cranium found in the grotto of Bruniquel is distinguished by purity of form, softness of contours, slight projection of its apophyses, and shallowness of muscular impressions,—features incompatible with the violent manners of a savage race.' In order to assure the reader that there can be no exaggeration in the eulogies bestowed upon these wonderful works of art, I have drawn the figure of a falling reindeer, which serves for the handle of a horn dagger, and he may judge for himself of the artistic genius which these inhabitants of Gaul, of the reindeer age, displayed. See fig. 14.

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In 1860 M. Lartet, unable to recover the bodies, commenced his researches of the cave itself. After the stuff from the cliffs, which had concealed the mouth of the cave, had been removed, there remained a terrace standing about forty feet above the bed of the valley, and level with the floor of the grotto. The soil of this terrace, and the earthy floor of the grotto, formed one continuous deposit, of variable thickness, but everywhere yielding relics of an ancient age,—hearthstones, charred wood, and beds of cinders, pottery, flint tools and arrow-heads, and burned and fractured bones of animals. But mark this difference! All the traces of *fire*, all the marks of good-table fellowship, all the proofs of industry, were *outside*, not inside, the grotto—in the soil of the terrace, not in the floor-earth of the cave. On the other hand, the human skeletons, the disjointed necklaces, were found *within* the grotto, and nothing of that sort occurred outside of it.

No stalactites were visible in this cave, nor the usual stalagmite covering to the floor; no traces of the usual bone-mud brought by water, and enveloping the remains, as in other ossuary caverns. The earthy deposit seemed a bed spread by the hands of man, on which to lay the bodies found upon it. It was, to all intents and purposes, a cave of Machpelah, an aboriginal mausoleum.

Outside the cave the friends of the departed had held their funereal feasts; but what were their delicacies? Animals no longer in existence,—the great cave-bear, the mammoth, the rhinoceros, the great horned Irish elk, and the cave-lion, attesting the immense antiquity of the event. The aurochs—now almost extinct—and the reindeer were also there. To these were added *entremets* of smaller creatures which have escaped extinction and continue to haunt our modern woods and fields: the common bear, the badger, polecat, wild-cat, wolf and fox, the horse and ass (?), the wild boar, common stag, and roe buck.* All the bones which contained marrow were found broken or split lengthwise with a knife. Hyenas' bones were also found; and these foul creatures must have stolen in by night to gnaw the relics of the feast, for the transverse marks left by their teeth occurred on many of the surfaces, and their dung was on the spot.

* One bone of a hare was also found.

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Inside the cave were also found portions of animal skeletons, so articulated that it was evident the flesh had been upon them when they were deposited. Outside, the remains of ruminants predominated, especially of reindeer and of aurochs. Inside, those of carnivorous beasts predominated, especially the fox. Some species were only represented by their teeth.

A few more details, and we will be prepared to draw conclusions.

A hundred lamellæ of flint, some flakes or chips of flint, a kind of hammer, and some *nuclei* or matrix-blocks, gave positive indications that the manufacture of tools and weapons was carried on upon the spot; and, therefore, that the visit of man to the grotto was not a single and incidental event. The bones and horns of the reindeer had been utilized for divers instruments, such as awls or bodkins, plain (unbarbed) arrow-heads, and whetstones in the shape of polished blades.

The earthy deposit inside the grotto contained, with the human skeletons, teeth of the cave-lion and wild boar, and bones of the cave-bear, wolf, fox, horse, aurochs, reindeer, and other mammifers, neither broken, gnawed, nor burned.

The picture of a bird's head was sculptured on the eye-tooth of a bear. A lamella of flint, perfectly fresh and unused, lay near it. The earth that had been thrown out of the grotto in a heap upon the terrace, at the time when the bodies were discovered, was carefully searched, and furnished a beautiful specimen of worked reindeer-horn, and about a hundred worked flints; many of them, however, so exceedingly minute that it seems impossible to imagine them of any practical utility to those who made them and placed them with the dead. These were probably *miniature weapons*, such as those small bronze swords and spears, an inch or two in length, which are often found in the cinerary urns of the north and south of Europe. (See Appendix to pages 309, 310.

In the same heap of dirt coming from the grotto, were found, naturally enough, other human bones and bones of animals, none of which were either gnawed or broken; and several fragments of pottery, more or less rudely made with the hand; the only instance on record yet, in which this art has shown itself to be of an antiquity

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commensurate with that of the extinct cave-bear. In all other cases where remains of pottery have been discovered, it has been in ossuary cave-deposits of the latest Stone age, i. e. (see page 66) contemporary with the *Bos primigenius* (Urus), long after the total extinction of the great cave-bear and large pachyderms, and the retirement of the reindeer to the polar regions. We must keep in mind, however, here that these other ossuary deposits were not composed, as in this case, of dry earth, shovelled by man's hand; but muddy loams, distributed by water; and that in such aqueous deposits *unburned* clay potsherds could have stood but little chance of preservation.

What now are our conclusions? We have here before us a terrace and a cave, divided by a door of stone. On the terrace traces of active life, a workshop and a table, so to speak. In the cave no trace of life, dead bodies only, carefully shut in from the assaults of weather and wild beasts. The dead were buried then, not burned. But more,—arms, ornaments, food, vessels, holding perfumes perhaps, or fruits, or cakes, were buried then (as in so many parts of the world is still the custom to this day) together with the dead.

Those savages believed in immortality! What was the age they lived in? The most remote of which we have, as yet, any certain information of the existence of mankind, —unless the reported discoveries of human fossils in the tertiary rocks be true—the first of the four established epochs of the great Stone age, the epoch of the cave-bear, the antique elephant and first rhinoceros; for the bones of this gigantic kind of bear were found not only upon the terrace but inside the cave.

These funereal fires, these offerings in the tomb, this workshop of the travelling equipages of their dead before its door, are so many speaking traditions of an ancient, a most ancient, a first and altogether aboriginal *worship of the manes of the dead.*

The strangest part of this strange story is, that when we turn to look at other funerary grottoes, for there are others, caves formed by nature and used for tombs by man, we see, first, that they are of a much later age, viz. the fourth epoch of the age of Stone; that characterized by the

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predominance of the urus bones and domesticated animals; and secondly, we notice in them no traces of funereal repasts; at least none such have been reported or described.*

Was the worship of the dead abandoned, or forgotten, or exchanged for some newer form of religious ceremony during this interval? That is hardly a possible supposition; for, as I have shown in previous lectures, Egyptian history opens under the auspices of this religious veneration for the dead; and the Druid dolmens, cromlechs, and other structures, now considered as belonging to the lacustrine or fourth epoch of the age of Stone, are all of them closely related to views and ceremonies which have the same religion for a starting-point. The cave of Aurignac stands as a fact so much alone in our present knowledge of those distant ages that it would be extremely hazardous to build any theory upon it involving comparative questions. It is very curious, however, to observe how the early sculpture also seems to have disappeared; for on the Druid monuments, and even on the bronze utensils and armour of more civilized times—those of the lacustrine epoch—we find no pictures of animated nature; only circular and cross-bar patterns of a mathematical character, or fanciful arabesque designs. If Troyon be correct in ascribing this remarkable abstention to religious prejudices, such as those which Moses afterwards established among the Jews, and Mahomet among his followers,—then he may be equally correct in assigning to the deluge a date falling between the third and fourth epochs of the age of Stone: that is, following the disappearance of the reindeer and previous to the appearance of the present races of domesticated animals and plants on European soil,—to a deluge which was connected with slow changes of sea-level, and the melting of continental glaciers; to a deluge which destroyed, not all indeed, but a large part of the previous population, and allowed of a fresh importation from the Orient, bringing with them an advance in arts and arms, domesticated animals, the serial grains and

* Since this was written, Mr Dupont has found a somewhat similar instance in Belgium, a description of which will be given in the Appendix to this volume.

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orchard trees; and together with this new social life, a more complicated set of religious ideas, among which the pure and simple earlier worship of the dead would occupy a subordinate and, perhaps, an insignificant position.

But it is in vain for us to attempt, in this advanced age, either a defence or a precise definition of the extravagant story of the deluge transmitted to us by the Hebrew scriptures. M. Troyon's strong religious convictions have prevented him from saying in so many words that the deluge, which he proposes to place between the third and fourth Stone age, was an almost insensible variation of the sea-level, due to the retreat of the glacial fields; but he leaves that inference to be drawn by his readers. Such, however, would be no Noachian deluge. It would be quite another thing to ascribe the introduction of new ideas simply to an amelioration of the post-glacial climates and soils of Europe, permitting an influx of an advancing population, among whom the primitive simplicity of ancestral worship had become confused and concealed by all those intellectual speculations and social customs which Professor Fustel de Coulanges, of Strasbourg, has traced backward in the pages of his admirable book, '*La Cité Antique.*'*

Whether this new population came from Asia originally, as the comparative philologists seem to agree in believing, or whether it was only reflected from the coasts of Asia Minor and Syria, like a wave, originating in the west or south, a view defended by Brugsch, in his discussion of the seat of the Tahmu race, and others affiliated with it, in the times of Ramses II., 1400 B.C.†; or lastly, whether it came direct from the great centre of Berber or Numidian life, by Malta, Sicily, and Spain, as Desor and other explorers of the Dolmen monuments seem inclined to favour,—in any case, such a population, endowed with Philistine (Phœnician or Pelasgic) arts and arms, would feel themselves no more embarrassed by the aborigines whom they found *in situ*, than the Quakers, Puritans, Cavaliers, and Catholics of the British colonies were by

* Paris, 1864. Reviewed in the Bib. Univ., Lausanne, xxx. No. 118.

† Geographie der Nachbarländer Ægyptens. 4to. Leipsic, 1858.

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the red Indians. The one race would disappear slowly before the other without a deluge, or be absorbed into it.

But the subject of the apparent disappearance of these mortuary rites from western Europe becomes more highly complicated when we add to it the equally mysterious disappearance of all subsequent traces of that early art, which has so astonished antiquaries recently, by the admirable productions which it left entombed in the caves of Perigord. 'What,' asks Dr Broca,* 'has become of this indigenous civilization, so original, so different from all we know? Did it disappear by slow modifications? No; it vanished suddenly, leaving no trace behind, and, everything permits us to believe, by force. Following it without transition, we can discover nothing but the imprints of a powerful, religious, warlike race, equipped with a perfected armour, and knowing how to polish silex, but otherwise not disposed to industry, and total strangers to all art sentiment. Sufficient indication of a brutal and conquering invasion! The cave-dwellers of the age of Stone, who had acquired the mastery of the soil, and had succeeded in extirpating the last of the great mammifers of the Quaternary fauna, did not know enough to defend themselves against the irruption of barbarians; and so we see a sort of *pre-historic Middle Ages* intervene, succeeding to beautiful days of a more ancient premature civilization, the origin of which is, as yet, entirely unknown.' But probably these people of the reindeer sculpture, so advanced in some respects, were merely the somewhat softened and polished offspring of the ruder savages of the epoch of the old diluvium. In more than one cavern, the lower layers of the soil contain rhinoceros and mammoth, while the upper hold only reindeer bones. The flints of the second epoch were worked by simple percussion, precisely like those of the first epoch, only that the flakes were smaller, and therefore the work finer. No rubbing was employed in either. The knives of both epochs are precisely alike. We may then conclude from the sculptures of the *reindeer* cave-men of Perigord, that the still more ancient *cave-bear* people of the grotto of Aurignac had begun to make designs. One such, in fact,

* Address before the Anthropological Society, Hist. des Travaux de 1855–6.

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has been discovered by M. Garrigou, in another Pyrenean cave,—a pebble, on which are cut the outlines of a bear.*

It would seem, in fact, impossible for a race, however low in mental capacity, to continue for many generations pecking away at flint nodules to make weapons, and at marrow-bones to obtain food, without developing ideas of form and the desire of producing them at will. Just so the ceremonial rites of interment must have grown up slowly from the most imperfect and accidental beginnings; and any ideas of a hereafter must have been educed by chance from the accidents of life, through the religious faculty; just as accidental likenesses in stones and bones, and chance marks which were made on them by human teeth and flint knives, must have provoked the artistic faculty to rouse itself to attempt æsthetic shapes.

All this was consistent with the lowest grades of savagery. I have said, in a former lecture,† that all evidence is against the cannibalism of the Scandinavian aborigines. But in other regions cannibalism may have prevailed. The subject has become lately a favourite and fruitful theme of discussion; and the evidence against the aborigines is growing formidable. At the recent festival at Salisbury, in honour of the opening of the new Museum of archæological relics, Dr Thurnam read a paper on the round-head people of the round barrows (corresponding to the *hügelgräber* of Germany), and the long-headed people of the long barrows (*reihen gräber*). He asserted the priority of the latter, and their evident addiction to human sacrifices. Mr Stevens stated that the human bones found in the pit-dwellings lately opened at Fullerton, were all split and broken like those of the animals with which they were found. In the Belgian caves the same fact has been remarked. M. Garrigou (and M. Roujou also) has exhibited human bones from the Pyrenean caves, on which exist marks of methodical percussion, intended for opening the medullary canal. Dr Clement, of St Aubin, in Canton Neuchâtel, has found the arm-bone of a boy, with numerous pointed teeth-marks on its sides and ends.

War is the normal social state of all savages; war with

* 'Which by the length of its cervical spiny apothyses resembles more the cave-bear than any other known species.'

† Pages 130, 131.

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the beasts, war with encroaching clans. Their style of war was to be crafty, treacherous, and consequently cruel. The growth of religious ideas once introducing sacrifices, war offers human victims, and hunger baits the temptation sooner or later, which when yielded to becomes a habit; and habits are hereditary. The traces of this custom are visible in the most civilized nations of antiquity. In Rome and Greece locks of human hair were laid upon the altar. Human effigies, built up of rushes, were on certain occasions solemnly thrown into the Tiber. Mr Blyth thinks that the same explanation will suit for the red powder which the Hindoos throw about upon each other in their religious festivals.

But whether flowers, or food, or incense, or ornaments and arms, or horses and slaves, or hecatombs of captured enemies, were offered in the sacrifices of the advancing ages,—all these rites, however beautiful some, however horrible others, were but the many-sided aspects of one aboriginal idea, the primitive religion of mankind, the pure and simple worship of the dead.

I have said the pure and simple worship of the dead. What, then, was the aboriginal savage's idea of immortality? A life beyond the grave; no more, no less. How, then, did it differ from the Egyptian, Greek, and Roman ideas of the state of the departed; and from that faith which the Christian casts, as his anchor, into Heaven?

All things are valued by relationships. A life *this* side the grave cannot be the same for any two living beings; how can the life *yon side* be other than most manifold? And its idea, if not mere book-lore, must be likewise manifold. The Egyptian's eternal mansion was a combination of Palace hall and Parisian restaurant. The Greek of Homer's day anticipated an Elysium such as Ossian sang. The artists and philosophers of the Empire half believed in a Hades of pensive, ennuied, gentle, garrulous, and regretful shadows, such as Dante has described, and Boccacio's 'Decameron' embodies in more earthly substantiality. The savage knew nothing of life but its wants and woes, its haggard forests, death chills, demon-like wild beasts, famines, incurable diseases; what could his faith in immortality do for his hooped and shackled nature? His

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worship of the dead was but the germ of a religion, a mere instinct of his animal affections,—nothing more.

The heaven of the Christian is a blinding reflection from the skies, of all the beauties and sublimities that the eye of the poet has seen upon the earth; of all the sweetness of this life that the heart of parent and lover has ever tasted; of all those sun-lit regions of science which the latest civilizations have conquered and possessed. The immortality of the ancients was the immortality of the dead, with their faces always turned regretfully towards the life that they had lost, because it was real life; while their immortality was but an eternal death, without an object and without activity. Jesus came and stood, and said, 'God is not the God of the dead, but of the living;' therefore we say of Him that 'He brought a *living* immortality to light.'

Yet after all, the Christian religion is but the ancient worship of the dead, sublimated, glorified, intensified, made more concrete in its objects and details, and concentrated upon one figure, around which all its ceremonial is grouped.

II. The second type of religion is that of the worship of the powers of nature. Fetichism is its lowest form; astrology and fire-worship its highest forms; but in every aspect its essential nature consists in the worship of the material parts of the world, under the false impression that they possess powers which they do not. This ought to be distinctly understood. There is a true and reasonable worship of the powers of nature, which regards their just sublimities, loves and respects their concurrent harmonies, burns with a grateful sense of their blessed influences on the life of man, and shudders at the imagination of disasters, which the understanding can explain, and even sometimes can predict, but not prevent, nor even yet, perhaps, escape from.

But a Fetich is a natural object superstitiously beloved or feared, because supposed to possess unknown, peculiar, or magical powers. A fetich is a thing personified by ignorant people, so as to be considered *able to act*—1. voluntarily; 2. under the influence of a kind or unkind feeling towards man; and 3. with some other kind of power than its nature would suggest.

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The earliest Fetiches, no doubt, were stones and sticks. A stone, for instance, has the power to lie still where it is put, but not to get up of itself; it can roll down-hill, but not up-hill. Imagine our horror at seeing a rock slowly and deliberately rolling itself to the top of a hill! or an Alpine aiguille nodding to us, and standing again erect! Yet that is the horror of the fetich. One of the most effective scenes in the spurious continuation of Bunyan's Pilgrim's Progress, is that where the wretched man is hurried off by demons towards the mouth of the pit, while all the trees along the road-side draw back their branches from his despairing grasp, except two twigs, which mercifully advance themselves, and by which he holds on and is saved. Amadis de Gaul and all the romance literature of the days of chivalry abounds in this conception, by the imagination, of a voluntary, kind or malignant, power, resident in things. It is the characteristic of our dream life; it makes nightmare nightmare. It characterizes all child life. It makes itself dominant, not only over the savage population of the globe, but over the most cultivated minds, at special times, and in respect to special things. I have known a well-balanced mind, set free from all superstitions but one, ascribe a prophetic power of mischief to broken glass. I have heard the most enlightened and liberalized people confess to a superstitious faith in those charming fetiches, the precious gems; and innumerable are the beautiful legends on record respecting their magical powers. I have myself worn for four years an amulet, which no money would buy; and since I have worn it, my life has been most prosperous. I will show it to you—it is the nail on which John Brown hung up his coat and hat all the time he was incarcerated in Charlestown jail. A friend of mine, a brigade surgeon in General Patterson's army, the first man who entered the cell, when our troops occupied the place (in 1861), looking round the room, saw nothing he could bring away for me, but this one nail, which the jailor told him had been thus used,—I hope it is my only fetich.

What married woman in this audience of Boston Illuminatæ would not feel heart-sick with a nameless premonition of impending evil, if her wedding-ring should snap asunder? That is her fetich. When the sword fell from

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the castle-wall, the seneschal never thought of ascribing it to the fatigue of leather; but to a voluntary ability in the sword itself to sound an alarm of danger to the noble house, of whose possessions it had been both grantor and guarantee.

It is impossible to enumerate the instances of existing fetich worship in the uncultivated world. The worship of the horse-shoe is still almost universal; I may explain its origin hereafter. So is the observance of the divining rod; which has a similar origin. Of ten or twelve thousand wells bored during the last eight years in the Venango county oil-region in Pennsylvania, a thousand (more or less) were located by diviners with a divining rod; or with a pendulum made of a deerskin bag enclosing a ball of musk; or by spiritualists falling into trances and executing spasmodic evolutions when they felt the influence of the spot to be selected. There is a popular lecturer on geology, whose wife practises the profession of a spiritual explorer, by help of this kind of fetich. The other day she held a piece of antimony ore to her forehead, and immediately fell into a rhapsodical description of a charming lake-country, in Canada, through which the vein of that ore runs. I have seen shafts sunk after silver in the glades of Somerset county, Pennsylvania, under the dictation of an old scamp, who would lay in his hunting cap a small looking-glass, which had cabalistic characters on the back of it, and was called an erdspiegel; and then hiding his own face over it, he would describe the depth exactly to an inch of all the mineral wonders that he saw beneath the surface. So strongly did the imagination of this fetich act upon his workmen, simple old German immigrants from the mother-land of superstition as they were, that they affirmed with all their faith, that when at work at the bottom of their shaft they could distinctly hear invisible agents laughing, talking, pounding, picking beneath their feet, removing the treasure downward out of reach; for of course they never found it.

Now if all this, and a thousand times more of it, be possible in our day, in this fresh land of honest, open work, compelling nature to say all and no more than what she knows—to do all and no more than what she has the power to do; leaving no hole or corner of the globe an

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unexplored retreat of the mysterious; with libraries full of demonstrations of the exact ability of every created agency to harm or heal us; with public schools to save our sons and daughters from the ineradicable first infection of this superstition of the fetich, how overwhelming a deluge of it must have submerged the early souls of men; those hapless savages, who trembled at every leaf-fall, and fled with averted faces from every natural object a little out of the ordinary shape.* What more inevitable than that such shapes as isolated pillars of rock, stones curiously perched on peaks and movable by the hand's touch, and ambrose stones, cheese-rings, boulders in river currents, labyrinthine caves and horrid clefts between high crags, made grandly vocal with the voice of cataracts, and with the awful roar of beasts; what more inevitable than that these objects of nature should come to be feared and worshipped? †

This was *sure* to be the case, when they imitated even in the least degree the forms of man or beast. Such a pillar of red saliferous sandstone, capped by a fragment of a layer of white limestone, as the traveller may see standing half way up the mountain side, and overlooking the west shore of the Dead Sea, was sure to have some horrible Lot's-wife legend attached to it. Two months ago as I passed along the southern shore of the Gulf of St Lawrence, rounding the point of Gaspè, I saw a rock called the Old Man, and was told that some few years ago another stood beside it, called the Old Woman, but the surf had carried that away. The ocean is a great artificer of such rude effigies, making and breaking them wherever there are suitable rocks on any coast. And the ancient savages were fishermen, and lived upon the coast, and sailed among these cliffs; and many a father's dead body was found near some remarkable rock, which grew to be the special object of his children's reverence; and many a legend of dead warriors got mingled up with new-formed

* See good instances mentioned by Livingstone.

† See in 'Harper' of November the account of the Indian worship of Mount Popocatapetl, 'the smoking mountain.' See the picture and description of Mount Barkal, in Upper Egypt, by Lepsius, Reise. See also the views of the cleft mountain behind Delphi, in Greece, and the cleft rock in front of the temple of Philœ.

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prodigies of the erosive powers of the sea; transitions from ancestral worship to fetich worship, and mixtures of the two. In this way we can explain the frequency of legends of animated stones, and human beings turned to stones, and in fact all the phenomena of early idolatry, together with that other class of legends wherein trees are substituted for rocks, maidens changed into laurel and myrtle and cypress, spirits confined in oaks, and the whole range of similar superstitions. But I shall show you hereafter that even for these superstitions there was a solid historical basis, apart from all disposition in the human imagination to personify and deify or diabolize the beneficent and noxious qualities of natural things. We must never forget that Druid priests lived under oaks, and their spirits were supposed to haunt them afterwards. The hunter who fell from the rock was supposed to become identified with the rock. Superstition acts upon material objects to convert them into fetiches just as heat acts upon a bar of iron to make of it a magnet. It was not the height of the rocky summit that evoked the savage's devotion, but the remembrance of some salvation there; it was his Ararat. It was not the tickled fancy which grew reverent before the natural rocking-stone. It was its unaccountable and imposing resemblance to the boat which had been to his race both mother and father in one—obtaining for him food in life, saving him in storms from death, and furnishing him with a burial-place—that made him reverent.

But the intellectual ground of fetich worship is now, and always has been, ignorance of natural history. The fetich is the first physical object which strikes the bewildered eye as wanting its own explanation. In this sense the range of the fetich is immense. It is not confined to sticks and stones. It ascends to the platform of classic art. The Greek priests made their statues live and move and speak and weep, as Romish priests do now. Memnon's statue with its sunrise music was a splendid fetich.

We can ascend still higher. I have mentioned the worship of gems, endowed with superhuman intelligence. But there is a far more refined fetichism than that. The whole system of the Cabala is built upon it. In ancient times extraordinary powers were assigned to words and numbers. They were treated as entities, powerful entities.

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You know how full the stories of the Thousand Nights are of this. The name of Solomon was the most powerful of all fetiches. He who could speak it rightly could bind and loose spirits, fly like a bird, and, in fact, command all the powers of nature. The King of the Genii was confined thousands of years in a casket merely because Solomon's seal was upon it. The story has been repeated in many forms. Asmodeus was thus shut up in a modern magician's phial. No satisfactory explanation of this class of superstitions has ever been published, to my knowledge. It must have some basis in real life. Primal error, which is a nothing, cannot bear fruit. The Pythagorean system of Philosophy turned on the magic powers of numbers. There is a great disposition in the human mind to dwell on coincidences. We are fascinated by the magic square, for instance, which adds up the same in all directions. I was once introduced to a learned Rabbinical scholar living in Berlin. His room was so full of tobacco smoke when I entered it that I could hardly discern his form at the far end. But I soon found that his head was so much fuller of talmudic and cabalistic lore that it was impossible to see any truth through that fog. He assured me that there was such power in a name, that the moment of the christening of a child was the most solemn and sublime of all the moments in his history. For as he was named so he became. The name had the power of destiny, and involved in its own letters all the events of that child's existence.

Now how could such a curious system of fetichism arise? I have given you the explanation, in part, in my lecture on the alphabet. The letters of a name are symbolic; their conjunction was cabalistic. But fully to comprehend the importance of a *word* to the old nations, one must imagine for himself the rise of the secret priesthoods, the sacred mysteries, the freemasonries with their signs and pass words.* Solomon was the representative Cell Man, or Cabalist, head of all the orders of freemasons, clerical and lay, so to speak, that have ever existed.† His name

* דבר DaBaR, Hebrew, *a word*, is the same as דבר DeBiR, *the tabernacle* of Jehovah.

† Solomon, Shalmanezer, Carloman, Charlemagne, such names are maypoles upon which have been hung all the garlands of mythology, for the nations to dance around. Solomon calls himself (if he wrote the book)

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was, in fact, the embodied idea of the Mystery; it stood for the whole body of occult lore. But it therefore stood for the whole political power of the initiated classes. Its use by any man was a guarantee of his good standing in the society, of responsibility as a messenger, of authority as an agent. All the spirits of the throne and the pulpit, the work-bench and the writing-table, were obedient to it. Hence, legends like that of Prospero and Ariel; Faust and Mephistopheles; Friar Bacon and Father Bungay; legends so devised as to conceal the real spirits, the real magicians, and the real words-of-command; but legends which, doing this work for their inventors, did also another for themselves, infused into the common people of every race a fresh and more subtle spirit of *mystic fetichism*, so penetrating and intangible in its character, that the wisest, most learned, and most holy men of modern times have not escaped its influence. For,

One step more, and we reach the highest grade of fetichism; rising insensibly from all before described. What is an orthodox creed, but a *mystic word-fetich?* Look at the wafer elevated by the Romish priest in the sacrifice of the mass, as a piece of God-man—thousands prostrate before it, not daring even to look at it, so awful is their dread of its power to bless them and to curse them, to annihilate them instantly! Yet that is merely a *thing-fetich*. Look now at that dogma, elevated by the Protestant preacher before the logical understanding of his audience, whose souls lie prostrate in the dust before it, not daring to use their reason on it, or to look it for a moment in the face, believing, as they must, that to doubt it is to be damned! That is a *word-fetich*.

What is the school of Gaussen and Hengstenberg among theologians, but a sect of Christianity retiring from the noble reverence and practice of the Spirit of Christ and his apostles, and from the sublime conceptions of the Hebrew poets, and dropping backward and downward on to the ground of literal fetichism; worshipping

in the beginning of Ecclesiastes, the Cabalist, or quelt (קֹהֶלֶת) which our translators have rendered *preacher*, without knowing that to *preach* = to *bark*, i. e. to speak oracularly (Arkitely); as, to *pray* = to *bray*; and as, to *gabble*, or talk *gibberish* = to *gobble*, i. e. to speak *cabalistically*, or in a manner unintelligible to the uninitiated or common people.

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the letter which, Christ says it, must kill; and converting the literature of all the Hebrew ages from David and Solomon to James and John into a gilt-edged quarto bound in calf; putting a more fatal stop to the progress of the Christian Church towards its millennial purity than ever did the golden calf which arrested the progress of Israel into their promised land! There are multitudes of Christians living now who entertain so strongly the old Jewish reverence for the word Jehovah, that they bring themselves to pronounce it only with a strenuous effort of the reason and the will combined. It is not simply from reverence for the infinite God whose special name it is supposed to be—but reverence for the *word;* because it was for ages one of the great world-fetiches, and called 'the unpronounceable.' Laymen had no right to take it on their lips. It was a privilege of clergy. It was fetich—or tabu—for the outside masses. Why? Because it lay at the heart of the special religious system of the Hebrews: because it was the supposed formula of Unitarian doctrine as opposed to all idolatry; because it was translated 'the *living* God,' and itself shared a sort of weird *life;* because it was the word-temple in which dwelt the shekinah of all transcendental science; veiled, but ready to break forth in fire and light; veiled like Isis, but before which the initiated priests might worship, trembling and alone. It was, therefore, to the ancient Jew, and still is to the devout but superstitious Christian, an awful silent logos.

In a still more distant east, we have another instance of an unpronounceable word, a fetich formula, the key to the mysteries of another system of religious worship: I refer, of course, to the sacred syllable **AUM** of the Brahmans. It is said to be of no known specific meaning, but to involve in some way the idea of the Trinity. Now we know what the Hindu trinity is: Brahma, Vishnu, Siva; the maker, preserver, destroyer. But why these three are so related to each other and to human history, or how they can be distinguished by the letters **A U M** (or any other mode of spelling **OM**), has not been clearly stated; nor can I venture to demand your long attention this evening to what I would consider the true demonstration of the curious problem. I should make it on Arkite grounds; by which I mean, that the word itself, *as pronounced,* has always

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been the symbol of Arkite *mystery, secrecy,* and *initiation;* being the representative of the roar or murmur of the great deep. **Mim** is the Hebrew name for the waters of the sea.* **Amim** is the Hebrew name for multitudes of peoples, the roar of which goes up as the voice of many waters. I have shown you that the shape of the letter **M** was obtained from the water-waved surface of the sea. You are all probably sufficiently acquainted with the pictures of the Hindu pantheon to recognize in Vishnu the Fish-Noah, or god of the waters, sleeping upon a coiled serpent, the symbol of water, and representing the preserving genius of the ark. Brahma as the father-creator represents the genius of the mountain. And Siva, the destroyer, his name being identical with the Typhon of the west, represents the devouring deluge. Then, although the three letters **A U M** are of western form, and the analogous Sanscrit letters have been so changed as to conceal their old meanings, the identity of the **A** with Brahma, **U** with Vishnu, and **M** with Siva, follows as a matter of course; and there is no longer any wonder that this **Om** is too dreadful a fetich to be pronounced, and too sacred to be taught by any Brahman to a man of any other caste. And yet, in spite of the prohibition, it has escaped. It leaked out, into many languages, in the earliest times. It formed part of many of the most sacred western words; such as, *Omphalos,* the navel, a name for the Delphic oracle; *Triomphé,* the cry or watchword of the priests of Bacchus; *umber* and *imber,* darkness and storm; *amber,*† the precious electron found floating on the waves. The Irish Druids called by this name, Omh,‡ the living God, and defined its meaning 'He who is.' There is very little doubt that it is the Ob, or spirit of divination, mentioned in the Hebrew scriptures, and the Obi, or necromantic power, of the blacks of Western Africa. It is not

* Egyptian ham-ham, to roar (Bunsen, vol. i. p. 462); Coptic *hem-hem,* to roar; hm, to fish, p. 463; mhi, to draw water, p. 469; mah, water (Bunsen cites Leemans, viii. xiv. xvi. for this, on p. 468).

† *Am,* Egyptian, gem or pearl. Bunsen, p. 455 (Coptic *ana-mei*), and *anm* (p. 456).—See the word discussed in the Appendix.

‡ Cf. *Amn,* Egyptian name of Jupiter, Coptic *amoun;* and also the Egyptian verb, to conceal; Coptic *amoni.* Compare with this the Amen of the Hebrew, and the Egyptian *ma* (Coptic *me, mei*), truth, true. Cf. also *amut* (Coptic *amen-t*), Hades; and *am-t* (cf. *ouōm*), devourer.

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impossible that it occurs in such modern words as *humbug;* for the second syllable of that word is undoubtedly (like bugger, and bugaboo) the Scythian *bog,* once meaning *god* (Bacchus), and now *devil.* It probably occurs in our word *Umpire,* or judge in equity, but refers in this case not to the man, but to the bar, or court, whose laws he but administered.

The unpronounceable divine name among the Hebrews is perhaps the best introduction we could have to the history of the third type of religious worship, which I have now to describe.

III. The worship of the gods in heaven.

You may remember that our first type of religion involved the worship which the early inhabitants of the earth paid, and many of its present inhabitants still pay, to their dead parents and ancestors. The second type of religion, the last described, coeval in its origin and coextensive in its duration with the first, was fetichism, the worship of the powers of nature, as expressed unintelligibly or magically in the objects of sense—mountains and seas, rocks and trees, sounds in the air, works of art, and words and creeds constructed by the priests.

Now the third type of religion is the worship of the invisible God as a creator, preserver, benefactor, and judge.

It has been the central question of all critical theology, how this religious conception was generated in the soul of man. Was it aboriginal? Or has it been developed gradually by civilization? Was it *revealed* at first? Or did it reside as an innate *co-essential* germ of intelligence in the human intellect as such? Was it the common property of the earliest people and afterwards lost amid the sins and miseries of migrating races, enslaved races, isolated races, perishing races? Or was it committed as a sacred and peculiar privilege to one chosen people, for safe keeping until the fulness of times had come, and the Son of God was revealed, and the new dispensation was inaugurated, and the apostles were sent forth to fill the earth with the light and warmth of that 'life eternal, which is the knowledge of the true God, and of Jesus Christ whom he hath sent.'

Of these theories, the last is held to be the true one by orthodox Christians. But it is opposed in many points to the results of that criticism of the religious history of man-

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kind which the modern sciences have forced the honest seekers after truth to undertake. Of course I will not have time this evening to pursue the discussion far. But I must at least point out the place where men of science stand to view the rise of the divine idea in man,—that glorious sunrise of the soul—the only sunrise in the history of mankind.

The idea of an invisible God finds its only analogy in the knowledge which the domestic relations give to children of their parents. It is reasonable, therefore, that it sprang, as a natural development, out of the worship of dead ancestors. If the idea of God be that of a being invisible, creative, provident, protective, and judicial, it differs *in no respect* from a combination of the two ideas of a living father, and a father who has entered his eternal mansion. Do you object, however, that the idea of God is far grander? I grant it: but that is a matter of *degrees*. The definition of the young minister, which took by storm the suffrages of the Assembly of the Westminster Divines: —'God is a spirit, infinite, eternal, and unchangeable, in his being, wisdom, power, holiness, justice, goodness, and truth,' was the glorious consummation of all the religious feeling and reasoning of all ages,—the flower of human thought, ripened in the choicest soil of the last deposits of the waters of civilization. Wisdom, power, justness, goodness, truth! What are these but human attributes, on which the whole superstructure of ancestral worship has been built? But the three epithets, Infinite, Eternal, and Unchangeable, are transcendental ideas, evolved by science; abstractions, only possible to well-formed, well-bred brains; enlargements of the savage notion of a father's character by civilized thinkers, whose material horizon has been widened by travel; whose astronomy has changed its starry firmament into realms of interstellar space; whose lives of leisure have allowed free scope for poetry as well as practice; and made love, not fear, the law of thought. Love is, like heat, the great expander. God is a product of philanthropy.* The shivering,

* Benevolence is an unknown instinct in the lower animals until they are domesticated with mankind; for their love of offspring is not only selfish, but provisional, and in all its exhibitions savage and cruel. Benevolence is foreign also to the animal part of man's economy; the

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hungry, timorous savage of the earliest days had not enough of love about his house to make a small-sized god of. Infinite! Eternal! Unchangeable! Men could *begin* to comprehend such epithets—to invent them rudely, I should rather say—when they began to build pyramids and 'eternal mansions' for their departed great: but not before.

We find, therefore, no trace of *our* idea of Deity in the earliest history of mankind. The Hebrew writers *report* indeed such traces; but their reports are not evidence because not contemporary. They only go to show what was the idea of God among the Jews *after the times of David,* subsequent to whom all their Scriptures seem to have been written. Or, if the earlier books should be considered as compilations from fragments of an older time—an opinion now placed almost above discussion—such fragments prove, not that our idea of God existed at the beginning of history, but, on the contrary, that it did *not* so exist. You will find an admirable *resumé* of the evidence of the truth of this statement in Chapter V. of a book by William Rathbone Greg, entitled Creed of Christendom. You need, however, merely refresh your biblical memories, and recall a few texts, to see at once that the common notion of a special revelation to the Jews, as a peculiar people, of the fact of the existence of One God, has no foundation whatever.

Milman and others speak of the *pure monotheism of the Jews* as a singular phenomenon, confined to the narrow strip of land called Palestine, where 'the worship of one Almighty Creator of the universe subsisted as its only sanctuary, and where, in every stage of society, under the pastoral tent of Abraham, and in the sumptuous temple of Solomon, the same creed maintained its inviolable sim-

stomach laughs at it; but the savage is little else than a reasoning stomach; he immolates his parents, and exposes his children, when they cease to benefit his own life, or gratify his own desires. Benevolence did not enter—could not enter into the early idea of a God. The Hebrew Jehovah is a selfish personage. The Christian God is Love itself. It is not made out whether *good* is from *god,* or *god* from *good;* or whether indeed there is any direct connection between these words. In the Appendix will be found a table of words, in 52 languages, standing for the ideas of God, Spirit, Angel, and Devil, which the reader may find useful.

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plicity.'* No! Their own writings show that they were incessantly and unconquerably idolatrous. No punishments could cure them. The High Priest of Jehovah is described as worshipping the Egyptian Apis, while Jehovah was thundering his law to this high priest's brother, on the top of the mountain, before their eyes. And when that law came down in his hands, it contained no notice of the doctrine of an only true God. Its first commandment merely forbade the people, to whom it was sent, from worshipping *any other* than their own God.

The fact is evident, that Jehovah was the family God of the Abrahamidæ; and *therefore* became subsequently the national God of the Hebrews. I do not mean by this, a family god in the sense of the ancestral worship; but a god, considered by the Hebrew progenitors of David and Solomon, whoever they were, as the *lar* or δαιμων of their house. It looks as if it were an adopted deity, adopted by the Hebrews (if they were Hyksos) from the Egyptian **NUK PU NUK**, the 'unknown God,' the male Isis, whose veil could not be raised; the god who refused to tell his worshippers his name; a name, in fact, in process of invention.† The story reads that this God *called* Abram out of Ur of the Chaldees; of course the call came from the God at his own home—in Palestine; he was a western deity. The story says that Abram's parents worshipped *other* gods (although in Gen. xxxi. 53, we read, 'the God of Abraham, the God of Nachor, the God of their fathers judge betwixt us'!), and that his children's cousins at the old eastern homestead continued to do so afterwards. The Jehovah was evidently a western deity. His other Hebrew name, Adonai, shows this still more plainly; for it is the Adonis of the Syrian worship, and was introduced into the pantheon of Egypt by Amenoph IV., a Pharaoh of the 18th dynasty, who took this God's name instead of Ammon's in his own, calling himself no longer *Amen-oph*, but *Khou-en-Aten*, or the *splendour of the solar disc*. Aten, 'the radiant disc,' was then the Syrian Baal-Adonis, introduced into Egypt by the Hyksos of the previous (17th) dynasty, under the name of *Sutech*. How it happened that a native Pharaoh, a lineal descendant of Amosis, the ex-

* Hist. Jews, i. 4. † See Appendix to p. 300.

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peller of the Hyksos (through Amenoph I., Thoutmes I. and III., Amenoph II., Thoutmes IV., and Amenoph III.), should forsake Ammon, persecute the old Egyptian ceremonial, and become a fanatical propagandist of a special form of Hyksos-Shemite faith, can only be explained by reference to the fact that his mother was a foreigner. Her pictures at Tel-Amarna have rose-coloured (i. e. northern-coloured) flesh. His own most extraordinary profile hints at a strange and tragic family origin; while similarly strange-faced priests, standing around his figure, at the altar, on the monuments, intimate that his reign was a temporary revolution in favour of the only half-expelled and half-suppressed Hyksos population of the Delta—a momentary triumph of that worship, every trace of which the next Pharaoh (Horus) did his best to obliterate; but which still survived, in secret, under his successor, Seti I., the founder of the 19th dynasty, and then was re-established as the worship of Seth, by the great Ramses II. and his unfortunate son Menephtha, the so-called Pharaoh of the Exodus.

Thus a direct connection is established between the Mosaic worship of Jehovah-Adonai, the Hyksos worship of Seth-Aten, and the later Israelitish worship of Baal-Adonis; and any noble character discoverable in the first must be related to what natural refinements the already long-existing civilizations of those countries had already been enabled to produce. In later times we are expressly told that the Jews of the twelve tribes worshipped Jehovah and Baal together.

But not to hurry on too fast, let us remount from the 19th to the 12th dynasty, and return from Moses to Abraham; for men's ideas are wonderfully changed in fifteen hundred years, or even in five hundred, to take the Hebrew chronology for our guide.

The legends of Abram's God Jehovah exhibit him to us in the most anthropomorphic garb,—the least spiritual and Christian possible. He sits with Abraham at the door of his tent. He eats with him; getting into an angry altercation with Sarah, the patriarch's old wife. He discusses with him the case of Sodom and Gomorrah; informing him that he was on his way thither to see if the reports he had heard of their wickedness were correct.

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The legends of Isaac and Jacob are *equally explicit* and compromising to the god they praise. They describe Jacob's family as idolaters, and Jacob himself as only gathering their idols together and hiding them under an oak (Gen. xxxv. 2—4) when he approached the domain of his western family deity. They tell a story of the cunning fellow regularly bargaining with Jehovah to take *him* for his God on certain conditions, and promising a tithe of his possessions if Jehovah would fulfil his part of the contract (Gen. xxviii. 20). To whom the tithes were to be paid, or for what end, is not stated; but this mention of an arrangement of tithes betrays the late date of the history in which the story occurs.

It was not until the Abrahamidæ came in contact with the civilization of Egypt that we begin to see any tendency of their Jehovah worship to rise to a higher intellectual level. Moses—a character representing the New Egyptian phase of Hebrew (or Hyksos?) life—takes one great step in advance of his forerunners. But even Moses makes no claim of *sole* existence for his nation's deity; but only insists that he is superior to all other gods; the Jehovah Elohim, Lord of lords, and God of gods.

In Exodus xv. 11, he is made to say, 'Who is like thee, O Jehovah, among the gods?' He is always represented as speaking to Pharaoh of Jehovah not as Supreme Ruler of heaven and earth, but as the God of the Hebrews; and to the Hebrews, 'I am Jehovah thy God, who brought thee out of the house of bondage; thou shalt have no other gods beside (or before) me.' What is true of the legends of Moses is equally true of those of his successor. In the 24th chapter, Joshua is made to urge upon the people fidelity to Jehovah, not at all on the ground of an exalted Monotheism, but because it would be the blackest ingratitude in them not to prefer the God who had heaped such favours upon them to all other deities. The subsequent records of the nation, as far as they can be considered historical, become a monstrous paradox in psychological research, if we suppose that there existed at that time in the Hebrew mind any idea of one true God such as we possess.

In fine, these records are full of charges against them of *infidelity to Jehovah*, but do not contain one single charge

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against them of *Atheism on that account.* No wonder! Do these records ever describe Jehovah in language such as a modern civilized thinker would dare to use? On the contrary, they tell us that Jehovah said to Moses: Let them make me a sanctuary that I may dwell among them (Exod. xxv. 8, 21, 22). Put the cover on the ark, and there will I talk to thee. And Jehovah spake with Moses face to face as a man with his friend (Exod. xxxiii. 9, 11). And Jehovah said, I will put thee in a cleft of the rock, and will cover thee with my hand, while I pass by, and thou shalt see my back parts (Exod. xxxiii. 21—24). Moses is described as piquing the *amour propre* of the Hebrews, by telling them how it was reported among the surrounding nations that Jehovah was their God and was seen by them face to face (Numb. xiv. 14). He is described as pleading with Jehovah when very angry, and nobly offering himself as a victim to his wrath, and thus gaining a respite and commutation of their punishment; which, however, involved an entire change of the whole programme of the Exodus, a change of base for their military operations, and the postponement of their invasion of Palestine for the mystic number of 40 years.

Surely all this is merely a slight modification of those far more ancient and semi-savage ideas of deity, which appear in the legends of the creation and of the flood, where Jehovah is said to make woman out of a rib of man; to take Noah and 'shut him into the ark;' 'to smell a sweet savour,' when Noah, liberated, made his first sacrifice; to invent the rainbow; and to promise no more 'to curse the ground for man's sake.'

But time went on. The wars of settlement, the civil feuds of rival judges, came to an end. The poet warrior and the regal philosopher sat in turn upon the throne of Zion. Peace bore its proper fruit; commerce enlarged the native genius of the Jew. Priesthoods devised grand ceremonials. The discussion of false mysteries sharpened the soul's perception of the true, as alchemy in our day led on to chemistry. Luxury bred vice, and the miseries of despotism generated a reactionary patriotism. The school of the sacrificers found itself confronted by the school of the sacrificed. Prophets arose to denounce the priest, and die for it. But as they died, the heavens

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opened, and they caught those visions of the one true God which were to become the living realities of after ages. Calamities crushed in upon the little remnant of that kingdom which David founded, and Solomon illuminated with his taste and wisdom, idolater and sensualist as he was. The poor 'favoured people' were meal between the millstones of Egypt and Babylon, ground to the finest flour. Their anthropomorphic deity vanished like a powerless, mocking spectre before the irresistible wind raised by migrating nations. But in its place arose the sun in a sky which, if not clear, was hot and bright. The abstract idea of God as a unit, an Infinite one, on whose strong arm Nature the mother, and Man her baby child, could always lean with confidence and ever-springing hope—of God the sole creator, sole sustainer, sole judge and executioner of justice—penetrated that broken mass of Hebrew people, as the alkaline waters of the drainage of the rain penetrate disturbed and fractured regions of the earth's crust, permeating the entire substance, metamorphosing, crystallizing, and charging it with veins of the precious metals.

It is impossible not to see that the God of the priests and the God of the prophets of Israel—and the same is true in our day—were two very different deities; the embodiment of two very different classes of ideas. 'Let any one, (says Greg) 'compare the partial, unstable, revengeful, and deceitful God of Exodus and Numbers, with the sublime and unique Deity of Job and the nobler Psalms; or even the God of Ezekiel and Daniel with the God of Isaiah; and he can scarcely fail to admit that the conception of the one living and true God was a plant of slow and gradual growth in the Hebrew mind, and was due—not to Moses, the patriarchs, or the priests, but to the superiority of individual minds at various periods of their history.' This plant of Aryan growth was first planted in the mountains of Judea, when Solomon, establishing his kingdom 'from the great River Euphrates to the Western Sea,' brought his people into contact with the pure Zoroastrian monotheism of the Persian plateau; and it came to flower when, several centuries afterwards, 'the chosen people' were banished from their native hills to hang their harps upon the willows of Babylon; or

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rather, we may say, were sent to school, tribe after tribe, back to the lands where their original ancestors first drew the breath of life.

It was Solomon who first learned how to say, 'Behold, the heaven of heavens cannot contain thee, how much less this house which I have built?'* 'The eyes of Jehovah are everywhere, beholding the evil and the good.' †

It was no priest or Levite of the temple service, but David the young shepherd poet, or more likely yet, some later prophet, whose verses, equally dear to the hearts of all humanity, came to be sung under that all overshadowing name, who chanted—'Whither shall I go from thy spirit, or whither shall I flee from thy presence?' 'Thou coverest thyself with light as with a garment; thou art clothed with honour and majesty.' 'Jehovah! who shall abide in thy tent? who shall dwell on thy sacred tumulus? He that walketh uprightly, and worketh righteousness, and speaketh the truth heartily. For the word of Jehovah is right, and all his works are done in truth.' 'He loveth righteousness and judgment. Lying lips are his abomination. But true dealers are his delight.' 'The counsel of Jehovah standeth for ever.' 'Thou desirest not sacrifice, else would I give it. Thou delightest not in burnt-offering.' 'The world is mine and the fulness thereof. Will I eat the flesh of bulls, and drink the blood of goats? If I were hungry would I tell thee? Offer unto God thanksgiving.' ‡

It was no Hebrew priest or Levite, but some Idumean sheikh of the eastern desert, who lived, it would seem from the best philological criticism, long after the days of Solomon, who said all those fine things in the Book of Job, like, 'Lo, he goeth by me, but I perceive him not.' 'How should a man be just with God? he cannot answer him for one of a thousand. For he is not man, as I am, that we should come together in judgment. Shall a man be more pure than his Maker?' ||

The fine words which are put into the mouth of the first

* 1 Kings viii. Cf. *δύνασαι δὲ σὺ πάντοσ' ἀκούειν Ἀνέρι κηδομένῳ.* Iliad, 16. 514.

† Prov. xv. Cf. *Θεοὶ τὰ πάντα ἴσασιν.* Odys. 4. 379.

‡ Psalms xxxiii., l., li., civ., cxxxix.; Prov. xv.

|| Job ix., xi.

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of the prophets, the reputed teacher of David, 'The strength of Israel will not lie, nor repent, for he is not a man to repent,'* give us still the narrow idea of a national god, and not of the universal and only God of the later prophets, such as was known to the author of the Book of Ecclesiastes, who threw the same idea into a much larger mould: 'I know that whatsoever God doeth shall be for ever; nothing can be put to it nor nothing taken from it.' †

It was in the midst of the desolations of Israel by the hordes of Mesopotamia that the greatest of the prophets expressed the Zoroastrian faith in those sublime words, 'To what purpose is the multitude of your sacrifices unto me? saith Jehovah.' ‡

And it was in the last convulsions of national extinction that the Prophet Micah proposed and answered the same awful question in the still sublimer words: 'Wherewith shall I come before Jehovah, and bow myself before the Highest God? With burnt-offerings, calves of a year old? Will he be pleased with thousands of rams, or ten thousands of rivers of oil? Shall I give my firstborn for my transgression; the fruit of my body for the sin of my soul? He hath showed thee, O man, what is good. And what doth Jehovah require of thee, but to do justly, to love mercy, and to walk humbly before thy God!' ‖

Thy God! The cycle is complete. The God of Abraham had become the God of the ten tribes; the God of Israel had grown to be the God of all; and now this God of mankind is about to come incarnate to the individual soul, to claim his last and highest throne of all.

It was the propagation of these splendid conceptions of deity, subsequent to the Babylonian captivity, and after they had come under the Zoroastrian influence of Persia, which cured the Jews of infidelity to Jehovah, made them self-sacrificing Unitarians to the end of time, and prepared the way for the founding of the Christian Church. And we are probably to explain the rapid spread of Christianity at the outset, by the wide diffusion of Jewish ideas, previous to the birth of Christ, among the sober-minded Gentiles of Western Asia and the Roman empire. But

* 1 Sam. xv. † Eccl. iii. ‡ Isaiah i. ‖ Micah vi.

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there resulted thence a strange mixture of monotheism with polytheism before the Christian Era, corresponding to the mixture of Christianity with every form of local heathenism which happened afterwards.

Professor Sophocles has lately published an ancient epitaph, dug up recently by a seeker for treasures of another sort, near the little town of Zerbhokhia in Magnesia. I will give you his translation of it.*

'No other corpse, whether of a man or of a woman, is permitted to be deposited in this vault. And if any one shall recklessly dare to open it, he will anger the most great, the King, the Almighty Maker of all things; and all the gods, and goddesses, and demigods, and the lady queen herself. For the depositing of any other corpse with these is forbidden once for all.'

We could not have a better description than this epitaph affords us of that mixed or primitive theism which pervades the older Hebrew or Mosaic Scriptures, and which gave place to a grander and purer monotheism among the prophets of a later age.

The date of the beginning of this change then would be about 1000 years before Christ. We find in the Hindu Scriptures of that date evidences of a similar growth of the religious mind. 'In the oldest portions of the hymns [of the Rig Veda, the most ancient of the Sanscrit books] we discover,' says Mr Muir, the latest and best English writer on this subject, 'few traces of any such abstract conceptions of the Deity. They disclose a much more primitive stage of religious belief. They are the productions of simple men, who, under the influence of the most impressive phenomena of nature, saw everywhere the presence and agency of divine powers, who imagined that each of the great provinces of the universe was directed and animated by its own separate deity, and who had not yet risen to a clear idea of one Supreme Creator and governor of all things.' †

The hymns of the Rig Veda are hymns to Agni the god of Fire, Sûrya the god of the Sun, Indra the god of Storms, addressed each under a variety of names, and strangely mixed up together, and sometimes actually identified with

* Journ. R. Asiat. Soc., New Series, i. 2, p. 339.
† Proc. Amer. Acad. p. 77, 1864.

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one another. But, as Muir and others have shown, there are strains in these ancient hymns which seem to come from some inner sanctuary, revealing a conception of divinity more spiritual and universal than the general tenour of the hymns. The grades of this spiritualism involved in the general materialism of the Vedic hymns are various. The reader can, as it were, watch the expansion of the poetic idea. Varuna is described as dwelling in a palace of a thousand columns, and a thousand doors,* before he is described as dwelling in all worlds, as sovereign ruler, possessed of illimitable resources, meting out, creating, and upholding the heavens and the earth.† The different earliest deities had their different admirers and special devotees. Each deity was praised in strains as exalted as the capacity of the worshipper, and as the growth of the religious ideas of his age. Hence, as the notions of space and time became enlarged, and the powers of abstract thought were cultivated, the pantheon swelled to colossal proportions; and each separate deity belonging to it became to his own worshippers the infinite and eternal God of gods; while yet retaining his own distinctive name and some relics of his original, local, and specific character.

The resemblance between the poetic imagery of the Hebrew and Hindu Scriptures of that ancient date is strikingly in harmony with the ethnological derivation of the Abrahamidæ from the land of Brahma. The Hebrew poet sings: 'The eyes of Jehovah are in every place beholding the evil and the good.' The Vedic poet sings: 'Varuna, the mighty ruler of the worlds, sees as if close at hand.' The Hebrew: 'Whither can I flee from thy presance? If I ascend into heaven, thou art there! If I make my bed in the grave, thou art there! If I take the wings of the morning, and fly into the uttermost parts of the sea, even there will thy right hand uphold me,'—is echoed by the Sanscrit: 'The earth belongs to Varuna the King, and the mighty sky whose ends are far away; the seas are his loins, though he lives in the smallest pool; let one flee beyond the furthest skies, he should not escape Varuna the King, whose messengers descend from heaven

* Rig Veda, ii. 41. 5; v. 62. 6; vii. 88. 5.

† Ibid. iv. 42. 3, 4; vi. 70. 1; vii. 86. 1; 87. 5, 6; viii. 41. 4, 5. 10; 42. 1.

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and thousand-eyed traverse the earth.' There is in the Hebrew poems a sad, sweet, noble simplicity and intense spiritual personality, which is not so perceptible in their Indian contemporaries. There is also in them an absence of gross mistakes and exaggerations, which place them on an eminence unapproachable by the admirers of their Sanscrit rivals; yet the common propriety which both these holy literatures have in all the essential elements of the divine idea is unmistakable.

This is especially true of the *later* hymns of the Rig Veda, and of the hymns of the Atharva Veda, supposed to have been not much, if any, less ancient. It is in these that we begin to find those grand titles: *Visva Karman,* 'the universal architect,' and *Prajapati,* 'lord of creatures;' but we notice that they are applied still to special deities: Indra, Savitr, Rudra, Soma, Vishnu, or Varuna. In the 121st hymn of the Rig Veda, for example, the deity is celebrated (under the name Hiranyagarbha) as 'arisen in the beginning; only lord of all; upholder of heavens and earth; giver of life and breath; god of all gods, and the animating principle of their existence.*

I need not follow this subject further. I confess I do not at all agree with the common explanations of the Hindu mythology, as published by Muir, Max Müller, and other Sanscrit scholars. Their theories seem to me to have no system. I think it is because they have no basis. They have not yet struck the key-note. In this course of lectures I have been gradually preparing your minds for a view of the subject, which I think *may* explain most of the difficulties which Sanscrit mythologists confess that they encounter. This is my tenth lecture. I have still one more to deliver. I have reserved the theme to which I have given most attention to the last. I do not wish to scare you with a deluge of unintelligible words. I think I can repay your patience with a solid addition to your knowledge. I think I can show you an order reigning over the apparent chaos of ideas respecting the gods in olden times. I think I can put into your hands the right key to the door,—the safe clue for the labyrinth. The ancient poets were *not* mad-men; the old philosophers were *not* all fools. They

* Sanscrit Texts, iv. 13 H. Muir, p. 344.

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could distinguish sense from nonsense as well as we,—though not as *well* as we. Classical scholars have been tormented by the inconsistent and contradictory family-relations of the Greek and Roman gods, father, brother, and son, being mixed up together. Sanscrit scholars are equally at a loss to comprehend why Bramanas-pati should be called in one hymn of the Rig Veda 'the father of the gods,'* and in another, 'the son of Tvashtr, lord of all.'† Now, I think that it is only in the theory of the development of the later monotheisms and polytheisms out of the older ancestral worships and fetich-worship of primeval times, that we can find our explanation of these and similar mythological absurdities. To the ancient bard, initiated in the Arkite mysteries, they were no absurdities. What was fetich to the vulgar crowd outside, was *history* and *poetry* to the priest within. And so it may become to us. But we must comprehend the *symbols*. Of these I will speak at large when next we meet, and you will permit me to devote an entire evening to them; for they cover the whole ground of human life, and interpenetrate every department of natural history.

For this evening I have but one more word to add. I have spoken of three types of religious ideas: 1. Ancestral worship; 2. Fetich worship; 3. Polytheism and Monotheism.

IV. The highest type of the religious idea is Pantheism. It is the philosophic idea of God. It is the idea which science takes of the divine. Science, you know, is the knowledge of the logical understanding; not the instinctive sight of the pure reason—not the deep faith of the loving imagination. Science is essentially irreligious, that is, unworshipping. Science looks down upon things—not up to them. Science analyzes, dissects, discusses, all things; God among the rest: or tries to do so; it is its vocation, its nature, its duty. Do not blame it. Do not feel a horror at it, as the Italians shuddered at good old Vasari, with his medical fez, loose gown, and scalpel. Vasari with his scalpel looked like a vampire hanging over that dead body. But there was no demoniac fury in the old man's eyes; no—there was a holy zeal burning in them, to

* Muir, p. 344. R. V. ii. 26. 3. † R. V. ii. 23. 17.

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discover the laws of the anatomy of the dead for the good of the living. Science is no vampire of the night, flapping its wings over our sleeping religion, soothing its slumbers, and sucking its blood. God forbid the thought. Every part of man must do its duty; and science is the work of man's logical understanding. Now, the investigation of God by man's understanding has always resulted in some theory of Pantheism.

Whether philosophers took Fetichism as their standpoint, or whether they took Ancestor-worship as their starting-point, they arrived at Pantheism. The worship of the father on earth developes itself into the worship of the father in heaven. Then the attributes of the personal god become generalized, refined, distributed, dissipated, and identified with the universe. When ancient sages came to believe in the absolute goodness, justice, love, and wisdom of deity, or providence, they fell into that peace which needed nothing, feared nothing, and therefore worshipped nothing. Nothing to blame, nothing to praise; the perfect whole became one great divinity. It was so in Magadha and Benares; it is so in Concord and Boston.

On the other hand, the worship of the fetich developed itself into the elemental worship of the ancients, and into the thunder- and war-providence worship of orthodox Christianity. If the progress of science has explained away the miracles, where is the miracle-maker? Distributed throughout his universe. All nature becomes a miracle. 'In him we live and move and have our being.'

But universal Pantheism is impossible. All the common instincts of man oppose his progress in that direction. Man also is a trinity: he is heart, imagination, understanding, in one. His God must therefore always be *personal* and *anthropomorphic* as well as *infinite*: personal—to be beloved; anthropomorphic—to be imagined; and infinite—to be confided in. The Incarnation of Jesus was a reaction of the human heart against the cold spaciousness of Pantheism. The Assumption of Jesus was a reaction of the imagination against the dark vagueness of Pantheism. So long as man feels himself a child, he will climb up upon the knees of the Father who is in heaven; or nestle to the bosom of Abraham. So long as woman feels herself oppressed and afflicted, she will idolize a well-defined divinity.

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Joy and sorrow make common cause against the approach of Pantheism. Youth and women—three quarters of the human race—are idolaters by natural necessity. Let then the progress of science—the deductions of the logical understanding—clear away from men's eyes the errors of the past, and lead them into that liberty of spirit which is due to Christianity, 'the liberty wherewith Christ made his people free,'—it will be none the less a fact, that 'the things of the Spirit are spiritually discerned.' There are things that science cannot grasp, some things that lie beyond the scope of logic; and it will be as true in every age, as it was when the blessed Master took a little child and set him in the midst of them, that—'many things are hidden from the wise and prudent which are revealed unto babes.'

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LECTURE XI.

ON ARKITE SYMBOLISM.

We have discussed the development of the Religious Idea under its four types: Atavism, or the worship of parents; Fetichism, or the worship of magical powers in the objects of nature; Theism and Polytheism, or the worship of heavenly powers; and Pantheism, or the philosophical deification of the Cosmos or Perfect Universe.

We ought, perhaps, now to take up the discussion of the generic and specific forms of ceremonial worship under which these four types of the Religious Idea have developed themselves in the history of the various races of mankind; and show how the tropical black races, and the hyperborean stunted races, seem never to have had the ability to lift their spiritual life out of the bogs and swamps of Fetichism upon the firm land of Theism, but have been a prey in all ages to the cruelties of demon worship and the low trickery of Shamans or sorcerers; how the central white races alone have had, first, powers of imagination to devise symbols to represent abstract thoughts, and then powers of understanding to construct intellectual systems to free their souls from the terrors of nature, and at last to subject the powers of the physical elements to scientific control.

But you are probably familiar enough with that train of thought to make its recapitulation unnecessary; and I willingly pass to a subject not so well understood, not at all elaborated in the books, in fact, hardly recognized by our new tribes of thinkers; yet lying, I believe, at the bottom of all true knowledge of ancient history.

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Let me claim, then, your attention this evening to what I must call, for want of a better name, the *Arkite Symbolism of the Ancients.*

Mythologists, like geologists, philologists, and other classes of savans, constitute a large and learned body in our day. Mythology has become one of the sciences. It has its schools also, and its *schoolmasterei,* to use a German word greatly needed in English, although the new chancellor of the University of Edinburgh was not precisely the man to introduce it. Its professors have their theories, differing widely, we must confess; but they work for a common end, and that a noble one: the elucidation of the religious intellectual history of mankind. They are always busy deciphering the ancient inscriptions, restoring in idea the ancient monuments, harmonizing all the ancient fables, and analyzing all the records of old forms and modes of thought and feeling which have happily escaped destruction in the lapse of time. Every month some learnedly-elaborated memoir makes its appearance in the annals of one or other of the learned societies of Europe, especially in those of Dresden, Vienna, and Berlin. At last our own country has begun to take a part in this fascinating recreation. Germany is to have no longer a monopoly of the philosophy of religious history. The *resumé* of known facts relating to all religions which Lydia Maria Child has given to us, would do honour to a European scholar. The coming of Kreutzer to New York, and Seuffarth to St Louis, furnished our thinkers with the same sort of stimulus as that which the coming of Max Müller to Oxford afforded the fellows of England. I do not mean to liken these three men to one another, or to draw comparisons between them and a host of other workers in this field of science—to Rawlinson, and Muir and Renan and De Rougemont and Bunsen and Aufrecht and Panofka. On the contrary, the fact that these men are all different—represent different views, views in many respects irreconcilable, in many respects visionary, illogical, contracted, preposterous, self-destructive, unworthy of true science, although, in many ways, throwing a flood of light upon the history of the past,—only shows that this science of Mythology is still in the process of self-organization. Let us work and wait. It will all come out clear and beautiful in its time. But as

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yet there is no reliable text-book, no infallible professor, of the science of Mythology.

This science may be said to be in its third stage of growth. It began with the classical scholars of the Reformation, Reuchlin, Erasmus, and the rest of the splendid list of the early prophets of the revival of literature, ending with Jacob Bryant and the so-called etymological mythologists of a hundred years ago. These men laid the foundation by collating from the Roman, Greek, and Hebrew writers all that remained about the gods and priestcrafts of antiquity. You find their labours recorded in the great dictionaries of Bayle, and Calmet, and Lemprière, and Gesenius, and Anthon, and Smith. And a precious mixture of fact and fable, sense and nonsense, it is. Mixed up, as it came at last to be, with the undigested learning of the Welsh and Irish mythologists, it settled into a mere fermenting muck-heap of absurdities, deservedly disgusting to the reasoning world; and so it was covered over with contempt, and hid away. But some day it will be opened up again, and will prove a mine of wealth under a better system of cultivation.

The next stage of the science opened with Young's and Champollion's discoveries of the lost key to the reading of the Egyptian hieroglyphs; followed by the successful investigations of Burnouf and Abel-Remusat and Pauthier and Lassen and Rawlinson and Wilson and Wilford, into the deciphering of the Assyrian, Indian, and Chinese literatures. This immensely enlarged the scope of the inquiry, explained the origin and meaning of many a Hebrew, Greek, and Roman mystery, and gave the first aspect of unity to the new science.

The third stage of progress was inaugurated by the Brothers Grimm, followed by a procession of scholars, taking up the subject of the *folkslore* of Germany, Scandinavia, Slavonia; working out the traditions of antiquity which still exist among the common people of Christendom, heathen worships which are practised in the nineteenth century in the bosom of the Christian Church, and bringing them into harmony or contrast with existing heathenisms in other regions of the globe, as these have been studied and described by hundreds of Catholic and Protestant missionaries at their respective stations.

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This will give some idea—vague but vast enough—of the amount of work in this science already done. But it will also suggest the state of affairs among its professors, and why discordant views are held by its highest authorities; I mean discordant *systems*—hostile *theories* of the origins and meanings of the different mythologies and ceremonials of history. Just at the present moment there seems to be a more concurrent sentiment among them; but it is a deceptive appearance. There is a lull in the storm of speculation, that is all. Everybody has turned to collecting facts. The same thing happened in geology a few years ago. The old controversies ceased; speculation, or theorizing on a large scale, was abandoned for the moment; geologists employed their time in observation, and refused controversy. But this could not last long, and did not last long. Hypothesis is king of science. The soul, like an artist, walks backward as far as possible from the canvas to see how the general effect of the picture is coming out, and then returns to supply deficiencies in the details, or correct the errors of the plan.

We may be sure that all that has ever been thought out carefully by the old mythologists will be taken up and re-incorporated with the generalizations of new men. Jacob Bryant had his day and is forgotten:—people say it. No! Jacob Bryant is yet to have his day. Some man of larger culture will yet do for this English mystagogue, what Rawlinson has done for Herodotus; what Birch and Hincks and Mariette are doing for Manetho. It is in the Arkism of Bryant and Harcourt that we are to find the solution of most of those still unexplained anomalies which prevent the mythological studies of our day from taking equal rank with those of the other and more so-called physical sciences.

'I comprehend well,' writes one of our greatest mythologists, 'the principle of the Arian religion, a religion entirely of poetry, a profound naturalism, touching, full of a high morality; I think I comprehend well the principle of the religion of the Shemitic nomades, such as the Book of Job presents us with, such as the Mussulman of Arab race still practises in our day; I even comprehend, to a certain point, those bizarre worships of Babylon and Syria, worships not Shemitic, and still less Arian, answer-

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ing to sensations of an order apart from these; but the primary idea of the Egyptian religion escapes me.'*

If such a confession can be made by Renan what must be the condition of that department of modern science of which he is one of the acknowledged leaders? Not to comprehend the primary idea of the Egyptian religion is not to comprehend anything of the genius, anything of the ceremonial, anything of the architecture, anything of the intellectual literature of primeval antiquity. Egyptian history goes back farther than all others. The Egyptian ideas of religion open to us the doors of all spiritual inquiry.

Our first business then is to obtain, in any way open to us, by an examination of its monuments, some clue to the central principle of the most ancient of the religious systems of Egypt, some notion of that 'primary idea' to which M. Renan alludes. For it is very evident that new and different notions were intruded as dynasty after dynasty arose, until system was piled upon and interfused with system to the prejudice, though not to the entire suppression or extinction, of the earliest ideas. The monuments of the Middle Empire (11—17 dynasties) and of the Classic Empire (18—21 dynasties) are covered with a literature from which our Egyptologists have constructed the so-called Egyptian Pantheon, with the Libyan Ammon for its Jupiter, and a long train of gods and goddesses, resembling those of Greece and Rome. At the commencement of the Middle Empire Osiris and his sister Isis first appear. Our first question then must be: Were these two deities the *earliest* gods of the Egyptians, and were they recognized and worshipped previously to their appearance upon the monuments of the eleventh dynasty? To obtain any right to answer this difficult question we must go back to the much earlier times of the ancient empire and see what images of a supernatural, mythological, or ideal kind existed then, and what probable meaning they can be made to bear.

In a former lecture I have noticed the extraordinary fact that the most ancient monuments of Egypt show no evident traces of religion; and I may add in passing,

* Renan, Révue des Deux Mondes, June, 1865, p. 682.

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Desor's assertion, that, up to the last discoveries in the lake-dwellings of Switzerland, 'neither an idol nor anything from which any custom of worship may be inferred has as yet been found, unless certain objects of baked earth called *moonsickles* may be by some regarded as religious emblems.' (See Appendix to p. 310.)

But there is one Egyptian figure of great antiquity and interest, that of the dog Anubis, the watch-dog of the tomb; the only image that can even lay a claim to the name of a divinity. The cognomen of 'a god' is no doubt in this instance a misnomer; we are doubtless dealing with a symbol. But we must bear in mind the name, *Anubis*, or—as it is written on the monuments of the old empire, with the figure, not of a dog, but of a jackal, with cocked ears, and tail erect **ANUP**,*—for we shall have occasion to refer to it hereafter. I will only say in passing, now, that if the jackal was in any sense or degree an object of religious reverence to the earliest Egyptians, it must have been as a fetich, out of fear, as the wolf and fox became objects of superstitious terror to other races of mankind, because it feasted on the bodies of the dead.† The dog alone could have inspired any such cordial respect as would justify the Egyptian artists in making Anubis the *guardian* of the tomb. It must however be borne in mind that his name in *old* Egyptian was not **ANUB** but **SAB**, the same word which was employed to express craft and cunning, and also a magician.

In spite however of this sacred silence of the earliest monuments the ancient Egyptians must have had *some* religious ideas besides the mere anticipation of an eternal

* Bunsen's Egypt, vol. i. p. 492, p. 515; Ideographs, Nos. 259 to 264; also plate vi. 27. See p. 321, below, and Appendix to p. 300.

† The wolf and fox in other countries take the place of the jackal in the superstitions of the people, as prowlers in the night, evil spirits of darkness. De Rougemont (Peuple Primitif, Geneva, 1855, i. p. 339) shows how the wolf was an emblem of night. Apollo λυκογενης, 'son of the she-wolf,' Latona, Night, is himself called the 'Wolf-slayer.' The Scandinavians say that two wolves perpetually pursue the sun and moon, and when they catch them there happens an eclipse. The wolf, Fenris, now chained (like the Satan of the Apocalypse), will one day break loose and swallow Odin and his universe. Fenris, is chaos or darkness, and his father Loki, is the evil deity. The Japanese consider the fox (**WOLF** = **VULP***es* = *Fαλωπεξ*) an incarnation of the Genius of Evil. The dog, on the other hand, is the priest of light.

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phantom-life within the tomb. We know, for instance, that the great *Sphinx* was in existence at the very opening of Egyptian history, and was an object of such veneration that the builder of the great pyramid, Cheops, the second king of the 4th dynasty, records his restoration of it with masonry;* and I have already spoken of the temple which M. Mariette found close beside it, as well as of the little figures in a well within its walls bearing the name of Chephren, the builder of the second pyramid. Now the great Sphinx stands all alone.† It was once an isolated outcrop of rock, rising from the inundated valley of the Nile. Some monarch, of a dynasty still older than the fourth, must have cut this island-rock (177 feet long by 65 feet high) into the form of a crouching lion, with a human head, coifed in that strange cap, with broad flapping ears, and long breast-lappets, which became the standard of taste in Egypt for 5000 years.

If we could get at the truth it would probably turn out, that the great Sphinx of Egypt was not a deity originally, but a symbol. The lotus bunches on the façades of the old tombs might possibly have been an accidental pictorial ornament. The broad flaring cornice of the temple might possibly have been an unconscious effort of the taste to beautify the awkward crest-line of a wall against the sky. But a *rock-carved lion with a human head* must have meant something; must have had an intellectual meaning; in mythological language, must have been a religious symbol.‡

But if the Sphinx had a designed and intelligible mythological meaning, then we may go back to the lily-mouldings and to the flaring cornice, and conclude that they also were probably religious symbols. To what system of symbolism then could they have belonged? What could have been the religious ideas of a day when there were no idols to worship, no ceremonial but the simplest burial service, no priesthood but that of the father of the family? Especially must we ask, what system of religious symbolism

* Renan says of this inscription found by Mariette, and now at Boulak, that it is so bizarre as to raise some doubts, p. 676 of his Révue.

† Picture of it in frontispiece of Bunsen's Egypt. See Appendix.

‡ Bunsen, Ideograph (p. 513), 277, sphinx, victory; *akr*, sphinx; *nb* lord. D, &c. [See his Nos. 273 to 276.] See Appendix.

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will include such heterogeneous elements as a sphinx, a group of lilies, and a cornice?

If we only knew from what direction the oldest inhabitants entered the valley of the Nile,—whether from India, or from Syria, or from Abyssinia and Central Africa,—we should have perhaps a more convenient starting-point for our investigation. But as the origin of the earliest Egyptian people is still an undetermined point, we must take the widest glance around the ancient world to see if we can find, in countries possibly connected with Egypt at the dawn of history, any mythological objects similar to these.*

Pococke has tried to prove that Egypt was first settled from India. Let us then look in India for the lily, the cornice, and the sphinx, or for some objects that resemble them. The Egyptian lily is no longer seen upon the waters of the Nile; but it grows all over India, and is the sacred flower of Vishnu and of Brahma. The sphinx is no uncommon sight upon the temples of India. The Egyptian cornice is not seen in India because its stiff and regular shape was only suited to the cold and mathematical pylon which it covered; but its analogue exists, as I have shown in a former lecture, in the uppermost bulging story of the Hindu pagoda and the Tibetan temple. To these I may also add another instance, the Uræus, or hooded-serpent, the sign of royalty which you are so familiar with, as seen upon the forehead of all the Egyptian kings, and which seems to be the *cobra* of India.†

There was then undoubtedly an early connection of religious ideas between these two regions, separated only by a moderate length of sea-coast. But there are also such diversities observable between the shapes above alluded to that we are led to suspect, and almost to believe, that two indigenous populations of entirely different stirpal origin, possessed indeed a common symbolism, but developed it in two quite independent lines.

Our question is: What was there in common to the religious symbolism of India and Egypt,—including of course in the field of our inquiry the intermediate and dependent regions of Persia, Babylonia, and Syria, as well? Ignoring

* See Appendix to page 302. † See Appendix to p. 340.

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for the moment all the elaborated mythologies of later times, what simple system of worship can we discern pervading the earliest monumental relics of that central historic zone?

I know of but one answer to this question. It is the answer of the Hebrew Scriptures, of the Talmuds, of the Cabbalists, of the Freemasons, of Jacob Bryant, Harcourt, Davis, and Faber:—The system of Arkite symbolism; the religious representation of the ark of Noah, the water on which it floated, the mountain on which it rested, and the man whom it preserved. Whatever may have been the nature of the event, wherever its scene may have been laid, at whatever date it may have happened—all matters which seem beyond the reach of our discovery,—surely, this Diluvium,—distorted records of which abide among all nations, in the New World * as well as in the Old—this Diluvium, so scoffed at by sceptics, denied by geology, and contemptuously ignored by all the present schools of philologists and archæologists,—this Deluge of Noah could alone have furnished to the most Ancient Egypt its symbolic lily, its temple cornice, and its Sphinx; as it afterwards furnished to the Middle Empire a numerous and complicated pantheon.

It may be asserted, I mean to say, that all mythologies issued from the ark. History itself begins with the word. Εν αρχη—'in the beginning'—'God created the heavens and the earth,' says the translation of the Seventy. **ARC**haios is the classical Greek word for *ancient*. Archæologists get the very name of their science from the ark which it has grown the fashion among them to sink.†

The Greeks called **ARG**os their most ancient city; and the mythological prototype of all sea-going ships was the **ARG**o. They considered the gods of **ARC***adia* the most ancient, as they were certainly the most primitively simple deities of the classic world. They called their most ancient and sacred religious ceremonies **ORG***s* (οργια); from which the Christians got their opprobrious term *Orgies* for all sorts of heathen ceremonies, especially when they were

* See especially Pacific R. R. Surveys, vol. iii. 3rd part; Wipple, p. 40.

† Architecture received its name from the same source, as I have already explained. The Latins said **ER***i***G***ere*, as we still say **ER***e***C***t*, when we wish to speak of building on a grand scale. (See Appendix to p. 303.)

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practised in the dark and secrecy. A curious relic of the ancient root is preserved in one of the African negro languages, the Bari, where we have the word **ORGU**, meaning *to be ashamed.* The Roman word for any mystery was **ARC***anum*—for any religious teaching **ORAC***ulum*—that is, an Arkite thing, knowledge shut up and sealed from public view.*

The ancient Phrygian name for their first man or king was *Ark*iaevais, which still survives in the Armenian word *Ark*aj, and its equivalent the Latin *reg*ius, or *rex*, a king;† in modern days it carries the same meaning even into the most distant regions of the earth; for throughout the whole Pacific Ocean the word **ARIK**-*i* means a *chief*, and in New Zealand, a *priest*, or *representative of God.*‡

Understand me, we are not now busying ourselves with the true *etymology* of the word *ark.* I am simply showing you that it was a word used in ancient times to represent the beginning of things, antiquity, religion, and religious mysteries; and that, preparatory to its application to the most ancient and venerable object of religious art in Egypt, the Great Sphinx. For although the common name of a sphinx in the Egyptian language was *neb*, or 'lord,' the proper and personal name of the Great Sphinx in the most ancient times seems to have been **ARK**, the ark. All other sphinxes afterwards sculptured to represent guards of the temples, and placed in two rows between which the processions of priests passed to the shrine, were copies of the Great Sphinx, and shared its names and honours.

As reasonable people what are we to think of these coincidences? Are we not shut up without escape to the conclusion that the primeval symbolism of the historic, literary, or mythological races of mankind, took form in the endeavour to perpetuate the memory of some diluvial catastrophe? and that its elements were of the simplest kind,—pictures and models of the ark, of the mountain, of the water;—a trinity of objects, representing the starting-point of history, and

* The old Egyptian word **ARK** signifies upon the monuments (says Bunsen) *conclusion*, shutting up. And in Coptic or later vulgar Egyptian, to *guard.* Compare Latin *Arceo*, I shut up, or prohibit.

† The prochaldean word for 'a king' is **SARP**, says Talbot, Jour. R. Asi. Soc., p. 446, vol. xx.

‡ See Lee and Hale.

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itself the starting-point of all mythology,—the first type of all those solemn ceremonials on which the poet and the priest, those intellectual aristocrats of early ages, organized society, and laid a basis for that culture out of which has sprung, like the lilies from the inundations of the Ganges and the Nile, all arts, philosophies, and worships that have awed and charmed and elevated man.

You will feel as I do, how impossible it is, if this idea be true, to enter largely into the details of its elucidation. I must confine myself to special points. How does the Arkite theory afford us any explanation of the Sphinx,—that wonderful object of the old Egyptian's reverence, crouching in front of the great pyramid, alone in its silent majesty, before the other pyramids were built, the oldest god of Egypt,—before the Egyptians knew there was a God? I have already said it was no god; it was a symbol only. In after-ages indeed it became a god, and was called, so the Greek informs us, *Armachis*. Its personal hieroglyphic name which the Greeks thus perverted, was *horem-hou*,* 'the Great Hou;' and some have brought this name Hou into etymological identity with the awful name of the Hebrew Deity, *Ihoua*, or Jehovah. At all events the celebrated sacred city of Egypt, Diospolis, the city of gods, is called by the Arabs to this day by the same name, *Hou*.

Let us compare the sphinxes of Egypt with those of other and more eastern lands; and then connect with these the chimeras, griffins, hydras, centaurs, tritons, hippocamps, hyppogriffs, and dragons of the classical and still more modern times. In all cases we will find that the attempt was made to combine the three essential elements of the Arkite symbolism in one object. The head of a woman with the body of a lion; or, the head of a man with the body of a bull; or, the head of a goat with the body of a lion and the tail of a serpent; or, the head and body of a man with the body of a horse, and the fins and tail of a fish. In all cases the first element represented the ark upon the mountain, or the Noah in place of the ark; the second element the mountain itself; and the third element the diluvial flood. The water was symbolized either by the lion's mane and tail; or, by the serpent as a tail; or,

* Renan, Révue, p. 676. But Fowler thinks that *hu* is *thu*, the same as *theos*, God (Jour. G., 4, 17).

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in the case of the Ninevite sculptures, by a covering of scales on the body of the bull; or, by the feathers of eagles' wings, as in the Hebrew cherubim, a type intermediate between the sphinx of Mesopotamia and the sphinx of Egypt. In Persia the single image was subdivided; and the separated elements formed a group of statuary. Mithras stabbing the bull which had a lion's mane; or, lions with diluvial manes flying upon the shoulders of the mountain bull. In such cases the ark was represented by the crescent horns of the bull. In the Egyptian type of sphinx the head-dress, flowing down over the back and breast like the mane of a lion, represented the water; and the female head represented Isis, the genius of the ark, the Venus floating on the sea, the Maia, virgin mother of Vishnu.

A hundred pages might be filled with illustrations of that ingenuity of fancy, with which this symbolism was brought to perfection by its inventors; and varied by the multifarious priesthoods, full of schisms and heresies, which followed each other like successive forests on that virgin soil. These few first elements of mythology have been played upon by all mythologists; as the seven musical notes of the diatonic scale have furnished to musicians the stuff of all their compositions; from the rudest Gregorian chant up to the bewildering fugues of Bach, and the splendid combinations of melody and harmony in the Don Giovanni and the Fidelio. The history of music has been in fact the counterpart of the history of symbolism; and been interwoven with it from the earliest times.

The score with its three cleffs* (which represent the triple water-line of the Egyptian monuments) embodies the idea of the Arkite trinity. The roar of the Bass around the Treble, with the melody in Alto, is the roar of the sea around the Tor-Baal; and it was produced in ancient days by the repetition of single words by the immense crowd around the temple. I have heard the monotonous responses of the *Ora pro nobis!* pulsating thus by the hour through the solemn gloom of the great Cathedral at Nantes, with a falling and then rising and then falling inflexion, like the periodical dash of the surge of the sea

* Compare the sistrum with its 3 rods (sometimes 4).

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upon the beach. If you will but recall the older Italian mass music, you will notice how it sustains itself nearly level for long distances, but with a perpetually upward and downward motion, confined within the limits of three or four notes, as if the waving surface of water had been actually before the composer's eyes.*

It is surprising how porous the stratification of human history has been, letting down, through all the generations, the percolating streams of tradition; each age passing onward to its successor what it received of its predecessor, with additions of its own. Thus are we born heirs to the wealth of all the past.

In Wales the traveller sees around him the accumulated work of many centuries, stone bridges, stone roads, stone houses, stone barns; stone walls of immense height and infinite in number, cover all the country; and within-doors the furniture and utensils are heirlooms from forgotten ancestors. So it is with the world's symbolism. The waters of tradition have been always gathering up the salt and oil from every stratum of history, to fill with them those reservoirs which we call Church and State and Family.

From State life, Church life, and Family life, you may select a thousand specimens of the traditions of the most remote past. I need nothing more than the commonest English forms of speech, the nursery words which you are teaching to your babies as they grow, in order to elucidate the meaning of those primeval symbols of religious faith which still stand, petrified, august, unhonoured, and misunderstood, as if they had at last fallen asleep from very weariness of all that they have passed through and seen done beneath them on the borders of the Nile.

The sphinx I have already explained, and the cornice moulding also, in a former lecture. The *lily* emblem is the floating cradle of Vishnu.† Flowers are the most beautiful mysteries of the earth-life. Was the eye of man ever indifferent to the shooting bud, the unfolding calyx, the flying pollen, and the swelling seed? We may well ask when the wheat and the apple, the poppy and the walnut (Ju-glans, the nut of Jove‡), were tamed and cultivated—reclaimed from their poor and savage meagreness

* See Appendix A to p. 307. † Idem, B. ‡ Desor.

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to be the comfort of the civilized man and the delight of the men of luxury and taste. Agriculture and horticulture are worships of the powers of nature, *cultus maximæ matris*. How closely must the earlier thinkers of mankind have watched all these phenomena of seed-time and harvest! How the primeval fancy must have revelled in this wealth of symbolism! It was the founder of free-masonry that 'knew all the trees, from the cedar of Lebanon to the hyssop that groweth on the wall.' It was in the convent garden that flowers grew doubly beautiful, and choice flavours began to exhale from every fruit. It was to the dreaming priest that the pomegranate looked a colony of living individuals, like his own fraternity; that the fir-cone seemed an Athos full of mimic anchorites; that the *nymphæa* was an ark of safety floating over the abyss, a *thebah* with its family of Noachides; that the nut (in German *nuss*) was a *vavs* or little ship, in which the infant deity lay hidden until his time was come. No wonder, then, that in Egypt—the country of floods, of inundations *par excellence*—the water-lily should become a prime and perpetual symbol of the mysteries both of death and resurrection, and take precedency of all those vegetable symbolisms which multiplied themselves in course of time according to the progress of intelligence and the appearance of successive new mythologies.

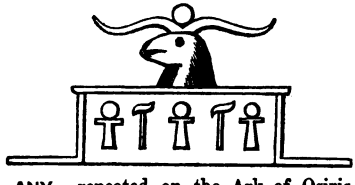

Fig. 15. ANX. repeated on the Ark of Osiris.

I must pass on to mention other instances of the embodiment of the Arkite sphinx-trinity symbol in other and different forms. And the first and most important one of all, you see it here repeated three times (see Fig. 15) on a group of hieroglyphs on the side of the ark of Osiris: at the beginning, in the centre, and at the end of the group. You recognize it as the sign of divinity which all the Egyptian gods carry in the hand, and which is also frequently seen in the hands of the images of priests (Fig. 16, k.)

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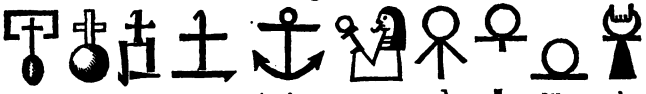
Its form is that of a ring surmounting a *crux ansata*, or headless cross; its name, under the old empire, was *anχ*;* and its meaning, *life*. But why did it mean life? or rather why did it mean *immortal* life, divine life, life beyond death, the life of the gods, i. e. of the deified ancestors? No answer to this question is given in the books.

Now if we apply the Arkite key to it we obtain an immediate intelligible answer to this question: the ring is the mundane egg or ship; the cross line is the surface of the waters; and the stem represents the mountain. If the cross pieces of the symbol were always simply made up of straight lines there still might be some lurking doubt about the meaning of the stem. But the Egyptian priests were careful to furnish a commentary on it by making this stem in many cases in the form of a pyramid or triangle; and a

Fig. 16.



tradition of this form is still preserved in the triangular shape of the arms of the Maltese cross. You may see the symbol in its perfect condition repeated, with the lily and the scarabæus, on this amulet or seal, found in one of the graves of the ancient cemetery of Tharras—the Thebes of the island of Sardinia (Fig. 17). It has been discovered

* Bunsen, Eg. Voc., p. 456, No. 62. Bunsen has not the *anχ* in his phonetic alphabet. In his determinatives he has No. 144 (Fig. 16), mirror, *ma-hr; hn-hr*, mirror. No. 128, *s'ha* (Fig. 16), to encase: *sna*, to turn away, knee. No. 127 (Fig. 16), seal, *χtm*, to shut; *snnu*, to enclose. No. 12 (Fig. 16), names of gods (living gods); 'same holding symbol of life.' (No. 11, same (without symbol of life), names of men.) In his Ideographs he has 408, 338, 288, 246, gazelle with it hanging from his neck, (*Ska, sha*, to collect, a crowd;) 239, 200, 199, 198, goddesses holding it; 174, 173, 164, 162, 154, 146, 141, 137, 135, 131, 116, 72, God holding; 35 (Fig. 16) is the 'House Good' on the tombs, the *tamboura* in the opened quadrangle. We are reminded of the shape of our anchor (Fig. 16), as if it had an etymology of *anch-Hor*, the *anχ* of Horus. I am also reminded of that beautiful symbol which stands over the gateway leading up to the Carthusian monastery, the Grande Chartreuse, a globe with a cross *over* it and the fine motto:—*Stat crux dum volvitur orbis.* (Fig. 16. b.)

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among the amulets of the Bronze age,* in the palafittes or lake dwellings of Switzerland. Figure 18 is from the last edition of Professor Desor's *Pfahlbauten des Neuenburger Sees*, p. 72, and is extremely interesting and important for our subject, because the water-symbol is here not the horizontal line of a *Crux ansata*, but a zig-zag ornamentation across the face of the mountain pyramid; while the sculpturing of the edges of the truncated pyramid very exactly reproduces the side mouldings of the later Egyptian propylæa. But we do not really need this visible elucidation of the symbolic form of the *anχ*. The obelisk is as much, and within eleven dynasties as ancient, a hieroglyph of the Ararat as is the pyramid.

Fig. 17. Amulet found at Tharras in Sardinia.

Fig. 18 ½ Gr. Bronze amulet found in lake Neufchatel.

But the position of the symbol is of some importance to the explanation, and it is therefore very interesting to remark that in all cases the 'sign of life' is kept carefully in one invariable position; that is, *ring uppermost;* or, in other words, all standing figures hold it by the *ring downwards*, but all sitting figures by the stem upwards.† Of course its whole meaning would be lost by turning it stem up and ring down.‡ Being a symbol of the deluge, it represented life destroyed and re-secured; it represented the passage of man through the grand catastrophe; it represented death and burial and resurrection; it represented the renewal of life upon the planet to the race of men; it represented the conversion of the Noachidæ from common men into immortal gods. Do you now feel the force of its

* See Appendix to pages 309, 310.

† I remember but one exception to this rule, viz. when gods or priests present the sign of life (either alone, or combined with the *tam* and the *tet*) to the lips of the king, or of a defunct person. This occurs repeatedly on the walls of the model temple in the Champs de Mars, Exposition of 1867. See Appendix B to page 308.

‡ And yet the Chinese Kou (fig. 16) = *ancient*, Pauthier's Pamphlet, p. 58; and Thou (fig. 16), *earth, terra* (p. 59), seems to upset it. Yet it is the tamboura of Egypt (fig. 16, No. 35), meaning music and *goodness*.

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triple appearance on the face of this sacred ark, carried by priests, and surmounted by the symbolic vase, from which issues the ram's head of the first man, Ammon, the god of gods in the Egyptian Pantheon? *

Before passing to other illustrations, I must beg you to let your attention be arrested by a coincidence in this same figure. The combination of the ship and water symbols in the ring and cross bar of the *anχ*, as represented three times on the side of the ark, is repeated in the globe and outspread waving ram's horns above it. It is a common combination on the monuments. It explains also the mysterious *winged globe* which so commonly occupies a central position on the cornice of Egyptian buildings, especially upon the lintel of the door [TOR]. It explains also the less ancient and more elaborate similar object visible on so many Mesopotamian and Persian monuments, *the flying Mithras* sitting in a ring, and upon a carpet, while his robes, spread out beneath it in a triangular or pyramidal form, represent the Ararat. In process of time the upward tendencies of human thought towards abstract conceptions and philosophical speculation converted the Arkite ring into a globe, which in its turn became the *mundane egg enveloped by a serpent*, which still later took, in one direction, the Bacchic form of the *pine-apple on the summit of the Thyrsus* [TOR] bound round with fillets of white wool (to represent the water),—and in the other direction the Christian form of St John's communion cup, from which the serpent drinks. As Spencer sings of Faith:—

> 'She was arrayed all in lylié white,
> And in her right hand bore a cup of gold
> With wine and water filled up to the height,
> In which a serpent did himself enfold,
> That horror made to all that did behold,
> But she no whit did change her constant mood,' &c.

But we must not follow the symbol through its innumerable transformations to so low a date, or we shall lose ourselves in a forest of details. Let us return to the study

* The figure 15 has been very badly drawn, from memory, the author having no access to the original at the time of going to press. It expresses therefore only the general idea. The Ram's head ought to have been drawn issuing from a jar or vase.

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of it in its original and simplest shape. Or rather let us confine ourselves now to its cross only, and neglect the ring. The Christian symbol of faith, the cross, was only an adaptation to the events of the death of Christ, of the ancient and almost universally recognized symbol of death and immortality, 'the sacred **TAU**.' It was recognized from almost the earliest dawn of the history of the classic world as a sign of life redeemed.* Its adoption by brutal and

* M. G. de Mortillet has published in 1866 an 8vo volume of 183 pages, 117 figures in the text, entitled *Le Signe de la Croix avant le Christianisme.*

He was led to the study of this subject by the common opinion that the builders of the Celtic monuments had no religious notions because no idols have ever been discovered in the dolmens. He has collected in this book the proofs of the universal or common occurrence, on these monuments of the bronze epoch, and of the first epoch of iron, of three principal symbols, recognizable under a multitude of variations: the *circle;* the *pyramid;* and the *cross.*

The circle, representing eternity, is still placed, under the name of *nimbus,* around the heads of Christian saints. The triangle, representing the Trinity, is almost always placed by Catholic painters upon the head of God. The cross represents redemption.

On the Celtic monuments, he says, the circle is usually simple, with a dot in its centre; but sometimes there exist concentric circles, up to seven.

The triangle is usually composed of a series of parallel straight lines cut obliquely by two other bounding lines. Sometimes the parallel lines are horizontal or vertical. Sometimes the pyramid is built up of chevrons containing one another, or, in other words, a series of isosceles triangles, inside of one another, all cut off by a base line. Sometimes two associated triangles compose a six-pointed star. [See p. 34, above.]

The cross is still more varied, made either with points, dots, or little holes, or with straight lines. Sometimes the ends of the cross pieces are turned aside at a right angle. Sometimes a dot or a circle is in the centre of the cross; or circles are at its ends; or between its arms; or a circle envelopes the cross; or is cut by its arms. Sometimes the cross is formed by four groups of semicircles, &c., &c.

This combination of circle and cross used at places of sepulture is of a religious importance, and has invited M. Mortillet's special study. He finds its use far anterior to Christianity. The worship of the cross, extensively spread through Gaul before the Roman conquest, existed in Emilia during the age of bronze. Its most complete exhibition is in the sepultures of Golasecca. It seems to have been a worship of such a peculiar nature as to exclude the worship of idols, and that with such severity as to forbid even the representation of living objects. In proportion as these representations make their appearance, the cross becomes more rare, and finally disappears. (Matériaux pour l'histoire, &c., Sept., 1866. Page 503.)

The discoveries in the catacombs of Rome put quite a different aspect

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superstitious nations like the Romans, as a *punishment*, can only be accounted for on mythological grounds, and by reference to the malign influence of a degenerate and cruel priestcraft. All tortures were symbolically contrived in those dark ages. Is it not, alas, in our own days that the *Tabor* of the divine transfiguration has been parodied by the *Tyburn* of criminal expiation? Is not the *Tabernacle* with its Holy of Holies still insulted in the Christian world by *Taverns** of drunkenness and vice? Is not even the splendid apostrophe of Ezekiel's vision made to stand in the pillory as an illustration of the meeting of the extremes of the sublime and the ridiculous, when the mother, in the nursery, sings to the baby in her lap the patty-cake song, bidding the baker-man to 'Pick it, and cross it, and mark it with T?'—'And Jehovah spake to the man clad in linen, saying: Go through the midst of the city, even Jerusalem, and stamp T upon the foreheads of the men who sigh and cry for all the evil that is doing in their midst.' The expression in the original Hebrew is *v'hithuitha tav*, (וְהִתְוִיתָ תָּו); literally, cause TaV to be taved upon them. So completely had the sacred letter become a mark of holiness, that a verb had been constructed out of it; to *tav* a thing, meant to stamp it with a tav ת. And we have retained the very word in our own modern language, only improving upon it and intensifying it by the prefix *s*, signifying holy. Our word S-TAM*p* is with this addition its exact equivalent; and the German S-TEM-PEL is a still further enlarged and enforced form.

When fathers eat of sour grapes, the children's teeth are always set on edge. Words never die. A symbolism, once established, can no more perish than an element in

upon this symbol of the cross. A friend has informed me that he saw in the catacomb of St Sebastian at least a dozen figures of the cross, and in every instance it was in the shape of the letter T; but one arm of the cross bar (at the right hand of the sufferer, the left of the spectator) was always longer than the other, and had always a square tablet of the accusation affixed to it at its end.

* When K replaces T, as in all that series of words which may be most strictly called Cabalistic, then the derivatives change their initials also. When TOR becomes CAR, and TAUR becomes CAER, then the English *Tavern* becomes the French *Cabaret*. *Bar-bar-ity*, *tor-ture*, and in-*carcer*-ation (from Latin *carcer*, a prison), are related to each other in precisely this sense.

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nature. Times change. Ages follow each other in solemn procession, like files of kings and priests along an avenue of sphinxes, each contributing its fatal riddle to the ceremony. Worships are donned and doffed, like priestly vestments, by the great religious spirit of mankind. Temples arise and draw in treasures like a man, and then lie down again, and die, stripped like dead bodies for the dust. All those things which seem to be real, prove themselves to be perishable and ephemeral like clouds. But words! those airy nothings! those birds of paradise, glancing across the air and sunshine of the soul! those clouds of ever-changing shapes, but ever of one substance; self-producing and self-healing, when the winds arise to dash them into fragments! Words never perish. They are the true waters of life: the world has never done with them. They rise for ever from the seas of soul, float, and appear around the mountain-tops of history, descend in branching languages, and yield man drink and plenty and intellectual commerce, and never-ending luxury. A word can never die. It may be changed; changed in the twinkling of an eye; caught up from its original gross meaning into a heaven of poetry, to sit with symbols in a realm of glorious imagination; but it must live for ever. Words breed like creatures. Each begets its like—with a difference; but the family resemblance lasts. The oldest word man ever spoke is spoken, with its old meaning, somewhere upon earth to-day.

Words, once invented by the poet, become דברים, TABORS—mountain-tops on which humanity erects its temples. In these shrines the deities of thought reside. The Hebrew language knew no difference between a word (*dabar*) and the *tabernacle* of the Lord of Hosts (*debir*). The Romans could not well distinguish between a denomination (*nomen*) and a deity (*numen*). For a self-preserving, propagating force lies in each word; as a specific genius conceals itself and works in every kind of animal and plant, throughout a thousand generations, against all the opposing principles of nature, endowing it with a sort of generous and special immortality.

To prove what I have said, I shall devote the principal portion of the rest of this lecture to the tracing of such a word from its earliest appearance in Egyptian history down

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to our own times. I might, perhaps, have selected some other one equally persistent and significant to better purpose. I shall have, perhaps, difficulty in keeping it clear of its symbolical entanglements with others. But although I must sometimes allude to such side connections, I shall try to draw one thread only from the skein, tangled as it is, even at the risk of sometimes breaking it short off, and with the certainty of losing a thousand indications of the old mythology quite as interesting and as important to the subject.

The example I select then is the old Egyptian word **TB**, meaning a *vase* or *pot*,* and pronounced in modern Egyptian or Coptic *taïbi*. That its central idea was that of *hollowness*, or a *receptacle*, is seen by reference to the old Egyptian TF, Coptic *thbai*, a *cavern*;† TPT, Coptic *taïbi*, a *boat*;‡ and TBA, Coptic *tébe*, a *box, chest, coffer, sarcophagus* or *coffin*.§ This last form of the word is made by two signs upon the monuments,—an unknown object and the human leg; the unknown object being evidently a ship-water-mountain monogram, occurring in exactly this shape as one of the forms of the Cadmean letter A (Figure 8, p. 235). The old Egyptian word for prostration in prayer, was this word TB repeated, thus: TB-TB. A prayer itself they called TB-TI; which was also their name for sandals or shoes; that is, the little ships in which we place our feet when we make a journey, or go a voyage. They called by nearly the same name, TB-T, the hippopotamus, or river beast, sacred to their Arkite goddess Isis.

Now if you will refer to any copy of the First Book of Moses, Genesis, printed in Hebrew, you will see that the word rendered in our English version *ark* (of course it is Noah's Ark, and not the Ark of the Covenant) is this same Egyptian word for a box, coffer, or sarcophagus, **TBE** (תבה); and Gesenius says of it in his dictionary that its etymology is quite unknown. Gesenius was the greatest of modern Hebrew lexicographers. But here is just where the old lexicography has always been at fault. No lexicographer has ever yet succeeded in getting one word out

* Bunsen's Egypt, Eng. Edit., Vocabulary, No. 516, page 482.
† No. 547. ‡ No. 549.
§ No. 517, 569; and its determinative is *the lid of a box*, No. 136, page 550.

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of another in an infinite backward series. You must, sooner or later, come to some beginning,—some first word in the series. That word must either be an instinctive utterance of the physical organs, or else it must be an artificial word, a manufactured word, a word invented by the fancy. Now this word **TBE** is from its very nature one of this last sort. Its true etymology therefore cannot be discovered, unless one will first provide oneself with some sure clue through the fantastic mysteries of the old alphabet-makers. We may not hit precisely upon all the details of the explanation; we may make minor errors in portraying this or that feature;—but we cannot be far wrong in an analysis based upon principles involving nothing but a knowledge of human nature and the monuments of authentic history.

As one of the two letters of the old Egyptian word was evidently constructed upon the Arkite plan, and represents an hour-glass crossed by the water-line; so it is quite possible that the three letters of the Hebrew word were chosen with the same three Arkite elements in view, **T** to represent the mountain, **B** (*Beth*, a *house*) to represent the ark, and **E** (the soft aspirate, equivalent to the sibilant) to represent the water.* The Greeks have preserved for us the actual final **S**, in the name they gave in common to the three most

* The discussion of such an etymology is of course one of the most difficult of all tasks, because, from the very nature of the case, the evidence cannot be direct, but merely inferential, or circumstantial as the lawyers say. That there was an original connection of the closest kind between the words TOR, KAR, NAR, TAB, and one or two other prime Arkite radicals, is demonstrable. It is also certain that TOR and KAR are in a multitude of cases contractions from TA-BOR and KA-BAR. It is therefore possible that TAB is also a contraction from TARB; and the story of Moses marrying Tharbe when he entered Meroe, and many other similar indications, point that way. Sometimes these monosyllables look like primary bardic roots, and sometimes like compounds. Even BAR itself, which has the most radical aspect of them all, may itself be a compound of B and AR; for *hor* is the Shemite word for mountain. But, on the other hand, when the labial disappears entirely from a word it often leaves behind it to mark its place an aspirate lenis or a vowel, or even a sibilant. To complicate the difficulties there come in the various articles, **P** in Egyptian, **H** in Hebrew. **T** in Greek, and **R** in the Romanic and Teutonic languages. BAR may possibly be explained by **P-TOR**, Egyptian, *the* mountain, which gave the Greeks their personal name *Peter* (πετρος), convertible into *Selas*, its Hebrew form. The subject affords a series of extremely difficult problems when taken in detail, while *as a whole* it carries an open demonstration in its face.—See Appendix to page 316, for Beth-ark.

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celebrated sacred cities of classical antiquity: the Thebes of Bœotia, the Thebes of Phrygia, and the hundred-templed * Thebes of Egypt, as old Homer loves to call it in his Iliad. The monumental name, however, was not Thebes, but **TABA**.

The Egyptian Thebes was the centrepoint of Arkite mythology, from the times of the eleventh dynasty, when Arkism had become a state religion in Egypt, and had its priesthoods, mysterious ceremonials, and architects. It was more than a thousand years after the building of the Memphite pyramids that Thebes became the capital shrine † of that resplendent symbolism. Within its walls were clustered those lofty corridors and gateways which illustrated the glory of the Middle Kingdom of Egyptian history, and strike the traveller to-day with the same awe which the ancients felt for them. It is a city, every stone of which tells some diluvial story. Every temple in it had the Arkite cornice over it, with the cord moulding for a water-line. Every one of its columns was a rock standing out from a marsh of water-lilies. Every capital was an ark from which the imprisoned Noah looked forth upon his worshippers, visibly or invisibly.

And if we turn to the Bœotian Thebes, at the siege of which all the mythical heroes of Greece and all the gods of Olympus assisted, as at the siege of Troy,—younger and far less fortunate and splendid than her Egyptian prototype,—yet there is scarcely an allusion to her in the old Greek poets which does not carry a meaning essentially and formally diluvial. The story of the dried-up lake; the story of the siege itself; the part her heroes took in the wars of Troy, that poetical **TOR** or **TABOR**, defended by **HEC-TOR**, 'the Lord of the Tor,'—all show how well the older Nilotic symbolism flourished when, transplanted to the shores of the Ægean Sea and crowned with Delphian laurel, it was made beautiful and youthful with the food and airs of Greece.

And this is all the more surprising when we remember

* Hundred-gated. But the gates were no doubt the vast propylæa or gateways to the temples.

† The Isle of Meroe also represented the Ark of Osiris, which was named by the Greeks *Baris* (βαρις), from which we get our word *Bark*, a ship, &c.

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how opposite the airy liberty of the Athenian gentleman was to the stiff formalism of the Memphite or Theban ecclesiastic. Among the heavy Bœotians the ancient doctrines might breed for ever unchanged. But even within sight of Mars Hill the old Pelasgic population tilled the fields and kept the ancient Berber traditions unchanged.

But what is calculated most of all to impress us is the fact of the universality of this Arkism in the ancient world. At one moment we are inclined to call it Pelasgic, at the next Phœnician, Phrygian, or Thracian. Now, it seems to have its principal seat in Egypt proper. Then, a crowd of geographical names on the monuments seem to refer it to the desert of Sahara, or to the negro continent of the head-waters of the Nile. Now, one remembers that the Athenians and other Greeks were Heraclidæ, that is, immigrants from the valley of the Indus, and that modern Hindustan, like ancient India, is full of Arkite names and monuments and ceremonies. The northern Scythia is also unmistakably an Arkite region; and so is Western or Celtic Europe. We can turn in no direction without seeing this round sky of aboriginal mythology touch and rest upon the earth. China, Japan, Corea, and the Australian Archipelago, the scattered islands of the Pacific and the southern continent of America, are full of every kind and degree of Arkite name and thing of history or reverence.

Its great antiquity alone will account for this its universality; and only by going back as I have done to the beginnings of recorded history, and by selecting objects from well-known localities to compare with one another, can we get any notion of the genuine meaning of this Ark or Thebes whose name has been stamped in a thousand styles upon the many-sided life of the world.

Keeping still close to Egypt then, but with our eyes open to resemblances in other countries, let me give you three or four instances of the propagation of the Theban idea among the Hebrews.

I have already given you one—the mark of the sacred **TAV**.

Another of the same sort occurs in the Hebrew word for goodness, holiness, or orthodox purity, **TOB**. This word, so incessantly employed in the Hebrew scriptures,—as it is the word which the traveller oftenest hears in Egypt, still,

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taïb! well!—meant something far different from the later and larger abstract Greek conception of holiness, freed from dependence upon priestcraft and ceremonial oaths of initiation and thunders of excommunication. The δικαιοσυνη of the writers of the New Testament, the δικαιος and δικη of Plato and Aristotle, like the Latin *dico*, I say (allied to δεικνυμι, our English word to *teach*) was worthy of the artistic simplicity of the Grecian intellect, and of its prophecy of modern science. It was not at Thebes, it was not at Jerusalem, nor at Oxford and Cambridge, that such a change of name for relationship of the creature to the Creator could have taken place. Only to Job in the plains of Moab, to Jesus at Nazareth of Galilee, to Peter on the tanner's roof at Joppa, or to Colenso among the Natalese of Southern Africa, could the inspiration come that 'every man that doeth right must be accepted of God.' Yet even the Greeks who had learned δικαιην, righteousness, still retained a tradition of the old sacerdotal Arkite word, in the list of their sub-olympian deities, as ΘΕΜ*is*, goddess of justice. The earliest church establishment at the dawn of history, equally with the latest sect of modern bigots, claimed the prerogative of the Royal exchequer to refuse the right of circulation to the holiness of the soul before it had received the stamp of the temple. And the legal language of the nineteenth century contains more than one relic of these ancient Arkite days when church and state were one, the king a priest, and the priest a king, when Bards and Barons exercised co-ordinate sacerdotal and judicial powers on the Barrow, or prophesied from the cell beneath it. The English judge is still a *Baron*. The criminal is brought to the *Bar*. Ship crimes are called par excellence *Barratry*. If the accused have done no wrong he is declared *Pure*. If he be guilty he can still be *Par*-doned. Then there are other words derived from the **TOR** or tabor. Our lawyers say that a *Tort* has been committed, and the accused must be *Tried*. This word once had a more dreadful meaning than now, for it was equivalent to being *Tor-tur-ed*, and *Tor*-mented. When we complain of being *tired*, we are not aware how fearful was the meaning of that word also once. *Dark*ness also took its name from the cell beneath the tor. But to return to our theme:—

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A third illustration of the use of the word **TAB** in Hebrew is the exact opposite of the last one. For, as I have already somewhere in the course of these lectures remarked, all spiritual expressions are disposed to polarize themselves,—to have a north and a south pole, morally, so to speak,—to take on two contrary meanings. Barak, in Hebrew, meant to bless and to curse. Sacer, in Latin, meant devoted to the gods as pure, and devoted to the devils as vile. This is precisely the case with the word **TABU** as used over the whole Pacific Ocean: it represents anything *set aside ecclesiastically*.* It occurs repeatedly in the Hebrew Scriptures as **TŪOBE** (תּוֹעֵבָה) in connection with the Exodus from Egypt: as in 1 Gen. xliii. 32: 'For to eat bread with the Hebrews was *tabu* to the Egyptians.' Gen. xlvi. 34: 'Every shepherd was a *tabu* of the Egyptians.' Ex. viii. 25, 26: 'For they would have to sacrifice the *tabu* of the Egyptians,' i. e. the bull, or some other animal which the Egyptians worshipped. And when we turn to the Coptic language for an explanation of the Hebrew word, we find the Coptic word meaning *to sanctify* was **TOUBE**. How this Egyptian Thebism got to be so wide-spread as to cover all the islands of the Great Pacific Ocean we may well ask. But who has been yet able to trace the *historical* connection between the neckpillow of Egypt and its *fac-simile* now used by the shock-headed negroes of the Feejee Islands? Or who has yet explained the presence of the Australian boomerang upon the monuments of Egypt? The coincidence, however, of the boomerang, the neckpillow, and the tabu system of Egypt, in the remote East, and at the present day, may open our eyes to the permanence of human thoughts and uses, and lead us to search for the *most ancient* relics of the past in the *most retired* nooks of the present world.

A fourth illustration of the use of the radical **TAB** in its Arkite or Theban meaning, in the Hebrew language, is afforded by such a proper name as David, when we regard the final *d* as an attributive affix. The greatest man of ancient times—if influence over the religious feelings of all succeeding ages can be accepted as a true criterion of greatness in any man—the man after God's own heart, as

* T. 14. 26. T. 34. 53.

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priestcraft calls him,—the pivot of all ecclesiasticism,—the true intellectual founder of that Hebrew Arkism which his son Solomon raised to the summit of political glory,—what other name could this man have had bestowed upon him but that of **DAV*i*D**, the Theban, the man of the Ark, *par excellence*, the man belonging to the *Tab?* For, while the Hebrew writers speak of the ark of Moses, David and Solomon, by the later name *Arn*, the Arabian writers always call it by the name which the Jews reserved for the ark of Noah, **TAB*u*T**, and at the same time they call the king by the same name **DAB*u*D.***

A fifth illustration, of much interest, is found in the Hebrew name of the jackal, **T*a*B**, תַּב, the *canis aureus* of Linneus, 'whose monotonous wail may be heard every night over the whole extent of the Desert of Sahara, whether by the camp-fire, or under the protection of the oasis.'† The Arabs call it **D*hee*P**. The importance of the word lies in the fact that it is the **A·NUP** of the monuments, (see page 300,) the first god Anubis of Egypt; a word quite equivalent to the **A·D*a*M** of the early Hebrew mythology, the father of mankind. It is peculiarly important to notice the prefix character of the **A**, which is extremely common in Arkism, and explains a multitude of otherwise inscrutable mysteries in the names of persons and things, always indicating that such names are taken from the *mountain* symbol. (See Appendix to page 300.)

I cannot stop longer to collect illustrations of the transplantation of the word **TAB** upon Greek and Roman soil, or to follow it in all its wanderings to other lands, and its adoption (with full Arkite meaning) into other lauguages. I will only draw your attention to it in the Latin form of **NAV*is***, a ship, Greek, *Naus*, which has given to modern architecture its term, the *Nave* of a church.

* H. 8. 1. *b. l.* The Arabic legend gives also Talut for Saul, and Djalut for Goliath.

† Tristram's Great Sahara. London, 1860. There are several other kinds of jackals in the north of Africa. The *Vulpes vulgaris* (L.), *Vulpes Niloticus* (Cuv.), the common Egyptian fox, very common in the south. *Vulpes famelicus* (L.), a pretty little fox confined to Southern Algeria, and the *Fennicus Brucei* (Desm.), the lovely little cunning, affectionate, squirrel-like *fennie*, half the size of a cat, with large ears and a bushy tail, caught by the boys throughout the rolling sand deserts. Besides these there are the *Lepus Mediterraneus* and *Lepus Ægyptius* (Geof.).

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A truce then to these antiquities! But where, you will ask me, where is this oldest of Arkite words, this Thebes or **TAB**, to be found on earth to-day? I answer—everywhere. Every woman has the word upon her lips as a household thing; at least on washing day; it is our homely English *tub*. Sailors call every slow old ship a tub. And can we see no meaning in the legend that the founder of the cynics dogmatized in a tub, when we remember that his name, Diogenes, meant goddess born? Diogenes philosophized in his tub in obedience to the same Arkite prejudice which forced the fanatical Simeon Stylites to prophesy for forty years on the summit of a Corinthian column, drawing up his daily food with a rope from the awe-struck crowds below.

The Theb that gave the Greeks their name for a goddess* **DIV***a*,—whether the gift came by the way of Arya or direct from Egypt matters not,—has given us our name for that most wonderful, most mystic, and most beautiful of all things, the drop of **DEW**.

One of the most beautiful forms in which the old word Thebeh appears in our modern vernacular is the name of the bird which every poet, every lover, knows so well, the favourite Christian symbol too of that divine providence, that celestial Sophia, that benevolent wisdom, which broods upon the stormy waters of human life, preserving, enlightening, and immortalizing mankind. The **DOV***e* was a favourite Arkite symbol long before the baptism of our Lord. How beautifully it plays its part in the story of the Deluge. Scholars have not failed to draw attention to the identity of its Hebrew name *Jon* with that of *Jonah*, who typified the Noah in the legend of the whale, and with that of John, the beloved apostle, which leaned at supper-time on Jesus' breast, and with that of John the Baptist, before whose eyes his feathered namesake hovered down from heaven to rest on Jesus' head.†

In the eyes of the ancients all birds in general, and as such, were accounted symbols of the ark. Aristophanes founded his half-satirical, half-mystical drama upon this sentiment. The whole system of auspices hence derived

* And for a wealthy man **DIV***es*.

† The *Yoni* of India will be noticed further on. See p. 326.

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its force.* A multitude of bizarre and picturesque legends, in all ages and among all nations, have been in vogue, founded upon a traditionary reverence for this primeval relationship of *bird* to *bard*. Sinbad's **ROC** was merely an Arabian inversion of the **ARK**. You may recall the horror of the genius of the lamp when, by the advice of the wicked magician, poor Aladdin ordered him to procure a roc's egg to be hung up under his palace dome; why! the roc's egg was the King of the Genii! We read in the Mohammedan books of a great bird called **DAM**,—a word, the equivalent of **TAB**.† The great flying dragon of the Chinese is called **TAP**.‡

The ancients believed that there was a language of birds which Solomon and his free-masons alone understood; meaning, of course, a secret language of bards or priests; and the eastern story has it, that the Hoopoo was excommunicated because he betrayed the knowledge of this bird-language to men.§

But why was the dove picked out of all the families of birds to be the special type and bear the very name of the Theb, through all ages, to the present day? Why among all the birds were just the turtle-doves the only birds that could be offered in sacrifice before the Hebrew ark? Why did the Greeks call it *περις-τερ-α*?‖ Why do the Germans call it *Turtel-taube*, and the English *turtle-dove?* What have the turtles to do with the doves? Nothing but a genuine Arkism could bring these two creatures together, representing as they do two totally different kingdoms of the animal world: the one inhabiting the air, the other the sea; the one the swiftest, the other the slowest of all animals. But the fancy is a fire which fuses together the most opposite elements. The Indian mythology begins with the mysterious postulate that the earth is sustained upon an elephant (the living **ALP**); and the elephant is

* See Appendix to p. 322.

† Its connection with Janus and Diana is more doubtful; although these deities are male and female representatives of the ark (the moon), and of the man of the ark (Noah), with his face set two ways, backward to the world before the flood and forward to the new dispensation. They bear a relation to each other like that of Is-iri (Osiris) and Is-is. She is the virgin mother of God, and he the God of re-established peace. T. 17. 44. See also the verse about the Devil and his Dam, T. 16. 12.

‡ T. 14. 21. § See Appendix to p. 323. ‖ J. 6. 2.

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standing on a turtle's back (the summit of the **TOR** projecting from the water); but the turtle stands on nothing, the beginning is reached, history can go no farther back than Ararat, the aboriginal **TOR**.

But this digression gives us no direct information on the subject of the dove. Let us apply then for an explanation to the language of ancient Rome, the Ramah of the west, one of the chief seats of ancient, as it is the capital of modern, Arkism; for many questions of this nature can be answered there. The Romans called the dove **TUR-TUR**, the bird of the Tor, *par excellence*. Now we can see why the Greeks called it PERIS-TER, that is, the *βαρις* of the Tor, the ship of the rock. *Turtel-taube*, then, in modern German means simply the *mountain-bird*. The Roman reduplication **TUR-TUR**, tur-tle, expressed a noun of multitude. The plural is commonly made in this way by savages, and was probably always so made in the most ancient languages. It is the same influence which induces English women to say incessantly 'Very very,' when American women content themselves with simply 'Very.' The dove not only by its habits of building its nest in the rocks, then, but also by its gregarious habits, building in colonies, and flying in swarms, represented those religious communities of priests, whose lamaseries and monasteries have played so important a role in architectural history; and those thousands of solitary anchorites whose cells honey-combed the rocky sides of every desert valley and of every sea-girt mountain. They represented also those more solemn communities of the departed dead, whose 'eternal mansions' pitted the rock-walls of the valley of the Nile, and made cavernous the limestone escarpments of Palestine.

The recent investigations of M. Rossi in the catacombs of Rome, rivalling in interest those of M. Mariette upon the site of ancient Memphis, have brought to light the fact that they were not quarries merely, adopted afterwards by the persecuted sect of Christians as places of refuge, chapels of worship and burial-places for the martyrs; but that they were authorized and regulated cemeteries, separately owned by chartered companies, protected by the Roman government, and used not only by the Christians, but by the Latin population previous to the time of Christ. They

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grew in course of time to so vast a size that their galleries communicated across the boundary lines; and the direction of their growth was determined by the desire felt by the Christians to be buried as near as possible to any martyr of peculiar sanctity or fame. These catacombs were all arranged on one plan however; and this is the interesting point which I wish just now to keep in view. They were excavated in parallel corridors, in the sides or walls of which the bodies of the dead were laid in oblong chambers, arranged in separate columbaria, or *Dove-cotes*. These were no new invention. In ages long preceding the Roman Empire, this was a common mode of building a necropolis, and it had its influence in fixing a religious meaning to the name and habits of the birds of which I am now speaking.

But there are other mythological connections to be noticed. In Egypt and in ancient Greece there was an order of priests, habitually called *black doves;* and the title does not seem to be one given in derision, like that of *crows* given to the priests by the modern inhabitants of Italy.* The same cause gave the Delphic priestesses the name of *bees, melissæ*. The multitudes of doves throughout the coasts of Syria strike travellers with wonder; stock-doves (*Columba œnas*), and ring-doves (*C. palumbus*), and common pigeons (*C. domestica*), Barbary Carriers, Turkish Crisps, and Persian Shakers, fill the air; while their numbers and gyrations are watched by modern soothsayers as anxiously and wisely as in any ancient day. But they are even more abundant still in the mountain-chains of the Indus, the Coh-i-Suleiman, which in fact is called in the Sanscrit ARG*a-varta, land of the dove.* You see that in the sacred tongue of the East, the *dove* is called the *ark*.

It was not so much because of these gregarious traits of character in a wild state, as on account of the domestic habits of the dove, its usefulness to the family, and its sociableness with man, that it became remarkable in

* It may, however, have had some connection with pictures of priests letting loose carrier pigeons seen upon the monuments. This was one of their favourite tricks, and one of the most mysterious and efficient means at their command to keep up religious communication over all the ancient world, and preserve an influence over the politics of all the ancient states.—See Appendix to page 325.

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ancient eyes. But it was given to Venus, not because of its loving disposition, for it is as ill-natured as all other birds, but because Venus was herself the representative goddess of the ark, and claimed the dove on account of the olive branch. Cama the god of love, the hindu Cupid, is seen in Coleman's Hindu Mythology, plate 21, riding on a dove with his bow and arrow ready to shoot. In the phallism of India the female member bears the Hebrew name of the dove Yoni.

But if the dove was peculiarly sacred in an Arkite sense, it had not much pre-eminence before other almost equally venerated birds, such as the hawk of Horus, the eagle of Jove, and the owl of Pallas. I repeat it, all birds, without an exception, had an Arkite sacredness in the eyes of the ancients. And why? Not only because they floated on the air as ships upon the water, but because they constructed *nests*. And every nest is a wonder of nature, an inspiration from God, a miracle of unpretending skill, a lesson to man of patience, taste, and foresight; a symbol of the marriage-bed, the ante-type and archi-type of home. But more than this is it, or rather *was* it, to the ancients. Poised on a tree-branch, rocking in the wind, freighted with its helpless, timorous, clamorous, new-born, open-mouthed, and large-eyed little family, it was a symbol of New Generation, and of the beginning of things; of the ark perched (BAR-K*ed*) upon Mt Ararat, holding its family of Noachides.

The nest, therefore, was called by the Greeks *the little ship* νεοσσια;* as the oak tree was called by them *the mountain*, δρυς, TORUS; and as the bard-baron who taught and judged and sacrificed beneath its living tumulus of green leaves was called the Druid, the man of the TOR-TREE, i. e. the oak, which more than all other trees resembles a rounded mountain, and in the hollow trunk of which the Druid found both cell and shrine.

The nest of every bird, therefore, was a sacred symbol of the ark to the ancients; and those were the most re-

* Νεοσσευω, to build a nest. Pathey gives in his vocabulary four or five separate and very different Coptic words for nest. I have already mentioned the fact that both the Greek and Latin ναυς (nafis), *navis*, and the English and German *ship*, *schiffe*, are dialectic conversions of the same radical letters which make the Egyptian and Hebrew **TBE** and **ThEBE**.

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vered which were built most prominently in sight about the dwellings of the people. The poetic veneration for the stork, for instance, that universal substitute for the dragon on the lacquered ware and temple walls of the Japanese—that household god of the inhabitants of the delta of the Rhine, recalls the affectionate reverence which the dwellers in the valley of the Nile felt for the same bird five thousand years ago. Its flight, its body stilted (S-TOL), like a shepherd of the *landes* of Gascony, upon a triangle made of its two diverging legs,—but especially its trick of building its little ship upon the gabel (*gibel*, Arabic for mountain) of the house, or on the chimney-top, that tower above the hearth, that temple of the household *lares*,*—all combined to make it an object of curiosity, affection, and Arkite significance. Hence its name of **S·TOR·K**, the bird of the mystic **TOR**. Hence it was adopted by the Egyptian mystagogues to represent in their hieroglyphic alphabet the local deluge of the Nile valley. You may see it, drawn as in fig. 19, *sitting on a black pyramid*, on the monuments.† Bunsen gives it as No. 291 in his 'Vocabulary of Ideographs.' He calls it, indeed, 'a Nycticorax alighted on a heap of corn;' but he gives as its hieroglyphic meaning '*to inundate, inundation, to swell, harvest.*'‡

Fig. 19.

The step from this first application to the deluge, and

* There is a whole train of Arkisms connected with the names for the chimney-stack in various languages; and not the least curious of them is the application of the term (cheminé) to the preposterous high heels of the ladies of the middle ages, which in Venice attained the fabulous altitude of a foot-and-half, so that the dame of fashion had to promenade between two gentlemen or two servants, leaning her arms, bent at the elbow, on their shoulders; and severe, but of course inoperative, sumptuary laws were made against the fashion by the Council of Ten. All these allied facts are explained by a single and direct reference to the word *Ca-bar*, in its various dialectic forms, as gibel, gabel, gable, cobald, cobold, cobalt, cabalistic, &c., meaning 'related to the sacred bar.'

† See Appendix. ‡ With the sound **AB-HU**, or **BAH**.

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the new humanity, or to the inundation of the Nile with the new harvest, to that of a genius of life, was easy to make. Therefore the Egyptian mystagogues used the standing stork-like figure, with legs outstretched, and a tuft of hair falling from its breast (like the long beard given to the figures of the male gods), as seen in fig. 19, to express *the human soul.**

But as I have already said, the stork was not alone in this beautiful idealism. All birds, by their swift and varied flight, suggested the idea of thought. The priests therefore portrayed the *soul* also by means of another hieroglyph, a bird with black wings and a human head and face, as in fig. 19.† But did the scribe wish to write *pure spirit*, he drew a Numidian crane, fig. 19, and pronounced it in his reading, **ARK**,‡ or a phœnix with human hands uplifted above a star, as in fig. 19, pronouncing the same word **ARK**. But when he wished to designate a *divine spirit*, a *divinity*, a *god*, he selected a bird of high flight and piercing vision, the kingly soaring and swooping *hawk*, writing it before the name of the deity, which he gives in phonetic letters (fig. 19). And the name of this *hawk-god* symbol was **BAK**, from which we may probably derive the Bacchus of the Greeks, and the Tartar *bog*, meaning god.

But to return to our Theban *nest* (which I am loth to leave without an illustration or two more), and keeping in mind its Arkite meaning of a little ship, I will draw your attention first to the 325th ideograph of Bunsen's list (fig. 19), S·χ 'a nest of birds,' which bore the unexpected meaning *water-places* and *to fill;* still in reference to the inundation and the deluge. Now look at this woodcut figure 20. It is a drawing of two antique candelabra, which stand beside one of the open doorways in the great corridor of the Vatican Museum. You see that they consist of the trunks of two trees—oak trees, apparently, from their gnarled and knotted bark—with enough of the first circle of their branches left uncut to hold three nests,

* Pronounced **BA.** See Appendix to page 327.

† Pronounced **BA.** Ideograph No. 322. Champollion's Dictionary, 54. The Hebrew word for the face of man and for the presence of God was **PE,** פה

‡ Rχ. Idiograph 292.

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Fig. 20. Antique Candelabra in the Vatican Museum.

one on the one tree, and two on the two forked branches of the other. In the first nest lie—not three unfledged birds, as in the Egyptian hieroglyphic—but three lovely baby children; and in each of the other two are packed five similar little cherubs, making ten in all. Here is a two-fold presentation of the self-same myth, done in the finest style of the most advanced taste of the classic age of art. On the one side you have the symbolic reproduction of the ark and its three principal deities, the three Cabiri, the *Dii Majores*. In the other you have the *Dii Minores*, the *Daktuloi*, or finger-gods of Thrace, the ten digits of the human hand, the ten creators, also called Cabiri, or gods of the old Cabala, but representatives of the family of the Noachidæ.*

* As I have shown in speaking of the arm and hand on page 234 above. The word, daktuloi, looks as if it were compounded of *deka*, ten, and *tel*, mountain. For the word *Thumb* is closely connected with Tom, tumulus, as is plainly shown by all the nursery stories of Tom Thumb, &c., and numerous talmudic stories, such as that of Abram preserved in a cave from the cruelty of Nimrod, sucking his thumbs, from one of which he

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It is needless to remind you what various changes in the form of the myth two or three thousand years of priestcraft must have created. The Hebrew story of the flood makes use of the number eight. But the number of persons in the ark varies in other myths. Sometimes they included Noah with his three sons, making the number four. Sometimes his wife, Anna, and their three wives are added, making the number eight. The Egyptian system of the middle empire duplicated all its deities. Its object was to represent the female principle always by the side of the male. Thus gradually there arose a combination of the ship symbol, which was always female, with the mountain symbol system, which was properly a male. This introduced, in course of time, a bewildering confusion between the ship and mountain symbols, which would require a volume to illustrate instead of a single lecture. Even the Greeks were no strangers to this accident. The pure ship symbols, Venus and Diana, were the only really unmarried deities they had; I mean the aboriginal Venus, riding in her shell upon the waters; and the Diana riding as a crescent through the sky—

'That orbed maiden,
With white fire laden,
Whom mortals call the moon.'

The number of the children, therefore, in the nests of our candelabra was not an essential point. These can-

got milk and from the other honey, until he grew up. One of the most beautiful and perfect Arkite traditions remaining in England, is the touching story of Peeping Tom of Coventry [*Kabar-tor*] and the good Countess, who was compelled to ride naked, covered only with her great vail of streaming, waving, golden hair, upon a horse through the streets, while all the inhabitants were forbidden to appear. Tom only peeped. The top of the Ararat was the only residue of all the earth that watched the *Gene-vra* (γενη βαρι), the *lady bark*, upon her lonely ride to save the perishing humanity. The same sort of connection between the Tom or Tor and the Bar is seen in the story of Martha (βαρις) capturing the dragon of *Tar*-ascon; and in the universal spread of the household fame of the dear lady Queen Bertha, whose home was equally in Provence, in Switzerland, where she has the reputation of having built all the Towers, and in Germany, where she is made the same as Eve:—

'When Adam ploughed and Bertha span
Where was then the gentleman?'

In English it runs:—

'When Adam delved and Eve span,' &c.

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delabra remain among the most curious and precious relics, not only of the art of the classic world, but of that fertile fancy which laid hold of every object in the wide circlet of the world to make some record on it of the aboriginal worship of mankind.

Have I wearied you with these details? It is only by heaping up data, one by one, that modern science builds its pyramids. It is only by the widest synthesis that we obtain our largest truths. It is only by showing you the same mythological fossils buried in the histories and languages of distant lands that I can prove to you the sequence in time, and the outspread in space of this grand mythological stratification of the spiritual world. I wish to show you that there must have been a profound and universal substratum of the mystical, the Cabalistic, supporting all the outer and more material life of the early ages of mankind, saturated with this Arkism,—this idea of the salvation of the human race from a deluge of waters, by means of a floating sanctuary, stranded at length upon some Ararat, from the sides of which the repossession of the devastated earth, and the rehabilitation or rejuvenation of humanity commenced again.

And therefore it is that we have the names of the old Gods in our business and baby talk. Our boys play with the holy emblems of the ancient faiths. Did you ever notice that annual series of boys' games, which moves on with the seasons, almost unseen beneath our eyes, preoccupied as they are with Christian and modern affairs? It is a veritable dervish-dance of mythological antiquities. It is a procession of symbols handed down from the most Arkite times; not by monuments, not in books, not by pandects and scholia; but by a free-masonry and tradition which only children understand. Its rules, its etiquette, its arrangements of times, and places, and shapes, its catchwords and penalties, have all been floating together down the ages on the ceaseless flood of child-play, foaming and sparkling and murmuring in the sunshine of parental and divine affection, over the whole surface of the earth. Notice these games, and you will see that they are all Druidic. I will not now stop to explain them; indeed, they need no elaborated explanation. But I ask you to regard that one of them which commences the series, the

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TOP. It is spun before us, on every pavement, in the spring. It is the most perfect emblem of the primeval Theb, whose name it bears. Its cord, like that which underlies the Egyptian temple cornice, and occurs so frequently in the Gothic mouldings, is the water symbol. Once it was lashed by priests, in sacred fury, round the temple floor, with a whip of many cords, to represent the multitudinous waves, roaring around the ark. Not ten years ago, in the heart of Arabia, the traveller Palgrave was clandestinely smoking his cigar outside of the walls of Riadh, the capital city of the Wahabees, when he was approached by a boy, who was amusing himself with just such a top as Palgrave had many a time played with in England, when he was himself a child. The boy spun the top in his left hand. Then he took it upon his right-hand forefinger, and keeping it spinning there, held it up above his head, his arm at full length, and repeated the formula, 'not by my strength, nor cleverness, but by the strength of God, and by the cleverness of God.'* Palgrave relates the anecdote to illustrate the foolish and excessive fatalism of these fanatical mussulmen. But it teaches a far deeper and older lesson.

And the rest of the series of these children's games, the hoop, the kite, the marbles, hop-skip, base ball, cricket, shinney (hocky as it is called in England), all of them are of a hoar and Druidical antiquity. You see the shinney on the coins of the Phœnician colonists. The kite, like the bird of the same name, receives that name from the same Arkite radical which gives name to the cat, the whale (κητος), the cod, and to the ships of the Mediterranean Sea. Cricket is the game of the Druid KIRK, and its characteristic is a wooden gate, or wicket, made in imitation of one of those tremendous *trilithons* which compose the circle of Stonehenge; and the game is a mimic war between two parties, one of which represents the priesthood, whose whole business is to protect the sacred lintel, which the other party strive to cast down and destroy. The game of marbles represents a similar attack from outside foes upon the safety of the initiated in the Church, in the form of marbles in the ring; for kirk or church is the same as κυκλος, or circle, in the Druid mythology of the past. The

* Proc. Roy. Geog. Soc. 1846, Feb. 22, p. 74.

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order of the Knights of the Temple were the last in Christendom to keep alive the mystery of building circular churches. The very name **TOR** *alley*, which the boys give to the great marble in the centre of the ring, is enough to show the Arkite tradition in the game. But above all, the game of hop-skip speaks for itself. No one can watch two boys draw with chalk on a pavement an oblong space terminating in an apse at one end, and divide it by cross lines, and draw a cross at the farther end, without seeing at once that the figure is the ground-plan of a French cathedral church. See how the little vagabonds then number the included spaces with cyphers from 1 to 12, beginning at the square (west) end, and terminating in the round or choir end. Then see one of them take an oyster shell—a neophyte—and with great difficulty, hopping on one foot, and with all sorts of mystic motions and complicated rules of conduct, according to a well-established order of tradition, which his opponent jealously observes, being on the watch to trip him up at the least infraction of the rules,—and see him shove the oyster shell from division to division on towards the cross and altar-place, where the catechumen becomes a communicant, and the communicant a priest—and tell me there is nothing ancient, nothing Archaic, nothing of the Eleusinian or still older Old Egyptian mysteries in that ! *

I might carry you far into the forest of such mystical correlations of our own with former days, by following the clue which has thus far led us, the Theban name of Noah's ark. There are other clues of equal worth, but I have held to this, to show you how one such leads us on from one chamber of imagery to another, until we feel at home in the whole house of the faith of the early fathers of mankind. This clue we have been following is not yet half unrolled. The same old word—this Thebes—comes up in almost every trade and walk of life.

* Many of these games bear in other languages equally significant Arkite names. For example, the game of nine-pins, a perfectly Druidic game, is called in French *quilles*. But **Q-UIL** is the equivalent of **Ca-BIL**, and the meaning is simply, when carried back through all its etymologies, Cabalistic. Quille is the French equivalent for the ke'el of a ship. I say nothing here about the game of chess because it requires a study by itself. Its best form is the Chinese, wherein the opposing forces fight across a river that runs between them on the board.

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The old maid still pets her *Tabby*-cat, the mystic animal of all witch-stories; the beast symbol, seen sitting on the sacred sistrum of the Egyptian musical performers.

The engineer, the bridge-builder, the chemist, has each his *tube*. It is the ancient *Tuba*, out of which the trombone of Pompeii came. The Mohammedan legend of Enoch says that the tallest and most beautiful of all the trees, standing in the centre of Paradise, was named *Tuba;* and that Allah commanded it to bend its top over the outer walls, that Enoch might take hold thereon; and so he was lifted over into Paradise.* And there is a curious story in the eastern books about King David and a tube: After the rebellion of Absalom, King David would no longer trust his own judgment. So he arranged an apparatus something like that which good old Dr Hare of Philadelphia arranged before he died, to prove the reality of his communion with the spirit world. The king hung up a *bell* in the inside of a tube; he would then place the accuser and accused one on each side of it. They would touch the tube by turns; and the ringing of the bell would designate the guilty. But it chanced one day that a thief was brought to judgment who had stolen a pearl; and the bell gave no sign; and the king accused the bell of bribery; but he afterwards discovered that the cunning thief had hidden the pearl in his walking staff, and handed his staff to the accuser to hold, when he touched the tube. The insulted instrument of justice resented the king's suspicion of its virtue, and caused itself to be translated into heaven.

These foolish Oriental stories are full of meaning. The Arabian Night's Entertainments are as much a mine of mythological wealth as the Hebrew Scriptures themselves. The proper names they use are significant of the oldest ideas of our race. But many of our own proper names, such as Charles and Thomas, James and John, Peter and Paul, date from the very invention of the alphabet. The first appearance of *James* and *John* is in an Egyptian history, as the *Jannes* and *Jambres* who withstood Moses, working miracles as wonderful, though not as powerful, as his. I have referred to the connection of the name of John

* Wild's Legends (N. 5. 7. e.). The story of the Queen of Sheba, s. 18, 19, p. 8, shows how the θηβ was typified long before the worship of Mary began.

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with the Dove or ark. The name of *James* was as closely and extensively connected with the *Ambrose* stones of the Druids, and the *Ambrosia*, or *baptismal water* of the Greek mythology.* The sinking Peter of the lake of Gennesareth and the Peter on whom the church was to be built, was emblematic of the submerged, restored, and re-established mountain.† In adopting these ancient personal names we propagate unconsciously the oldest known ideas of civilized mankind, mixing, however, with them, and in most respects overlaying and concealing them with the more intellectual, but not less symbolistic, ideas of all the ages that have intervened between the earliest and our own.

All modern life is therefore impregnated with this ancient element. It is like gold in quartz, found everywhere, on every hill-top, in every river-bar. One need but have it said, it is here—to look—and find it. It moves on the waters; it springs from the ground in the names of plants; it floats over our heads in the names of birds. The *table*, around which the family sodality institutes itself and comes to consciousness, is an antique Arkism, although it is the chief characteristic of modern civilization, for it is the altar of love (al TOR), the *tabor* of home life. The *S-tool*,‡ on which the mother sets her feet—the *carpet* on which the children play, the rug at our fireplace on which the cat is purring, are Arkite in their English names. The carpet especially figures in all Oriental tales with a mystical meaning. We still use its classical name when we say *tapestry*; or, that a subject of discussion is on the *tapis*. The cross-legged Turk upon his carpet, on his stone-floor, is the Boodh, the Noah, the Vishnu in his Theb, upon the waters.§

Why does the Coptic woman of Egypt, at the present day, call the yeast with which she makes her bread mysteriously swell up, and grow full of cells, by the sacred name

* H. 8. l. r.

† I have said above already, that P was the Egyptian masculine article. But the mythological symbolism must hold good, whether the etymology offered in the text be accepted or not.

‡ Stol is the universal Sclavonic word for table; showing not only the contraction of *tabor* into *tor*, but that the *s* is a prefix or denominative sign, and not a radical element of the word.

§ *ταπης, tapis, teppich* (K. 13. 19.)

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of T*h*AB ? * She knows no more about it than a priest in Germany does when he says *taufen*, to baptize, or we ourselves when we say in English *dip*, and *deep*, and *dive*,† in reference to water, or *tip* and *top* in reference to a mountain. A schoolmaster's etymology is a stupid affair, a handboard at the entrance of a *cul-de-sac*, or blind alley. An aboriginal Bardic word is a divine thing, casting a broad bar of light across the past, as the setting moon illuminates Lake Leman to the eyes of the pensionnaires of La Tour de Peilz when the Bize is blowing from the plains of Germany.

I have made no attempt this evening to prove the etymologies with which I have plied your perhaps long since fatigued attention. That would have been an intolerable stupidity. In fact it could be done only by placing before the eye a multitude of tables, lists of words in many languages —not thrown together, pell-mell, in a heap, as is too often the case with those great works of German linguists which make the world stare and students despair, but arranged with all the care and skill that a man of physical science knows must be expended on a cabinet of modern history.

But I have wished and tried to give you some idea of, or rather a genuine feeling for, the reality of the great invisible and antique world of Types, as it exists about us also now—now in this 'Age of type' as it has been called. Our printers play with things that they call *types*, and little do they think that every one of them was once fetich, a *symbol* of the gods, *shem-baal* (שמבאל), *σημα της βαριδος, the name of the Ark of Osiris.*

I have tried to show you also how this world of types possesses a life of its own, capable of indefinite expansion and self-reproduction. We must always distinguish—and hitherto it has not been sufficiently done—between the worship of man's spirit and that of man's imagination; between the adoration of a God of love or vengeance, and the curious fetichistic respect for some suggestive figure, sound, or motion in nature. It astonishes the missionary to see a pagan alternately supplicate and revile an idol. It has puzzled the writers of the history of philosophy to explain the origin of Yezideeism or devil-worship. But, let us start fairly with some great event, impressing the resident human population of the globe with awe, and we

* T. 28. 43. † T. 18. 42.

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can comprehend how the following generations occupied their uncultivated imaginations in separating the elements of its story, and in showing their veneration, gratitude, or terror, by inventing from all the vast materials of nature around them a symbolism, which became religious, without ever becoming simplified, without ever becoming stable. We can comprehend how the ark of Noah would be worshipped equally well under the form of the dove and of the hawk; under the form of a rocking-stone and of a Doric capital; under the form of a mandarin's button or a Venus' shell; under the form of a Parthenon upon an Acropolis, and of a sepulchral chamber below the base of the pyramid of Cheops. If we divest ourselves of our habitual ideas of religion, got from the teachings of Christ, by which we are born into the belief that worship and adoration are the same thing, and are due to God alone, and without respect of places, we can then put ourselves in the position occupied by the aboriginal inhabitants of Switzerland, living on their pile-built platforms, dreading nothing so much as an inundation, and being without the distinct imagination of a providential and protecting deity. Blind emotions, blind yearnings, blind fancies were theirs, groping after definite thoughts, struggling helplessly for liberation from the blackness of darkness. As at once naturalists and physiologists, we can dissect those fossil people; and see in the casts of soul, which the mythologies of not much later days afford for our inspection, incipient organisms, initial types, opening that series of the intellectual and spiritual fauna of historic deposits, which is the grand analogue to the geological column of genera and species in the rocks. It is as certain, in my opinion, that respect for the simplest forms of Arkite symbolism, an unæsthetic, unmetaphysical, unmathematical, confused, dreamy, inconsistent veneration for whatever suggested to the eye the ideas of the ship, the mountain, and the flood,—constituted the principal part of the early religion of the race,—as it is certain that trilobites and brachiopods monopolized the Silurian world. This granted, the conversion of species becomes an easier problem to solve in this domain of thought and feeling, than in that animal world.

Arkism, like all other exhibitions of life in the universe,

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carried in its own centre its own force of development. It looked; it began to reason; it invented; it began to build. It reached towards the sun, and became Mithrism; towards the stars, and became Sabaism; towards commerce, and became architecture; towards beauty, and became the splendid idolatry of Greece. It had its branch of politics in Celtic Druidism and the ritual of the great 'high place,' old Rome. It had its branch of mysticism in the gnostic world of Asia. It has its branch of humanity in the Monts de Piété of modern Europe.

In a word, everything at the opening of the intellectual history of man was cabalistic; and most things remain cabalistic, in a mythologic sense, to the present day. Nine-tenths of the people of the earth are still living in the practice of cabalistic formulæ; and nine-tenths of the religion of the remaining tenth is actually and demonstrably cabala. The Free-mason reverences the gavel without knowing, until he reaches his highest initiations, if he does then, that it represents the gibel or mountain form, and is therefore cabalistic. The Chancellor of England sits gravely on the awkward woolsack, without knowing that wool is the cabalistic symbol of water, and that he is Lord High Baron, because, like the bards and barons of Druid times, his place is at the summit of the bar or holy mountain. We all of us talk of monkeys gibbering, and idiots muttering gibberish, and turkeys gobbling, and school-girls gabbling, without a suspicion that these words date from the times when the language of the initiated was a mysterious, unintelligible cabala to the common people. The Frenchman calls his horse a cheval and the German calls his a gaul, without reference to the fact that the motion of the animal was recognized to be that of a ship on the waves, by those who first subjected it to the saddle, and at the same time cabalistically invented the fish-tailed hippocamp to carry Neptune. And the same scorn of the tonsure is expressed to-day which prompted the boys to cry to Elisha, 'Go up, thou bald pate!' with the same ignorance that the circlet of hair around the naked skull is the symbol of the Arkite water around the naked mountain-top; and therefore the French word for hair is *cheveux, capilli,* i. e. the cabalistic sign of initiation into the priesthood.

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I cannot dismiss the subject without again reminding you that I have confined myself to only one train of analogies, that led off by the word **TAB**, **TBE**, or *Thebes*. I might have made the same use of any of the variant forms of Theb; for instance, **TOM**;* and shown you how it was represented by our *tomb*, and *dome*, and all that class of words; and their derivatives, the *tabor* and *temple* and *devil* symbols. Or I might have taken for my guide the word **ARN**, which the Egyptians used to designate the oval or cartouche in which they placed a royal name, from which the Hebrews got their designation for the ark of the covenant, and the Latins their word *urna* with its dependencies, as I have mentioned in my lecture upon architecture.†

Or I might have chosen the word **BAR** (or **BAL**) to be the clue through our Arkite labyrinth (with its compounds and contractions, kabar, caër, car, tabar, tower, tor, bark, bar't, cabark, kirk, &c., &c.) as the fullest and richest of all, in traditional meaning.

I might have shown you how these symbols were compounded to suit the needs which arose with schisms and heresies of all kinds, as the times rolled on, and under what strange disguises some of them have entered into the languages which men now speak.

For instance, the heresy of Phallism, converting all the older Arkite symbols into illustrations of its own philosophical conceptions of the mystery of generation, gave to the various parts and members of the human body those names which constitute the special vocabulary of obscenity at the present day. It is only by reference to other Arkite symbols of the mountain-top—as standing above the waters constituting itself the new starting-point for life upon the planet — that we can solve that unsolved mystery of mysticism, *circumcision*, for which the Hebrew scriptures offers no explanation, and the practice of which has been pursued for ages far outside the limits of the Levitical influence. But when the true key is given it is seen at once to be a precisely identical phenomenon with the *tonsure* of initiation, the *tiara* of the papacy, the ducal crown, the

* T. 6. 3. Dom Kirche, T. 17. 35.

† Bunsen, vol. i. p. 44.—Aaron, Moses's brother.—עֵץ the tree of which idols were made. Isa. xliv. 14.

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university cap, and a thousand curious female head-dresses scattered about the world.

Another curious region into which the study of this subject may be pushed, with the certainty of good results, is that of necromancy, rhabdomancy, geomancy, palmistry, as they still exist and drive flourishing trades among the ignorant and superstitious. It is easy to see that the Ophism or serpent-worship of the ancients was merely a one-sided Arkism, deifying the water symbols in an exaggerated degree.* It is equally easy to show that the Yezidee, or devil-worship, was but a modification of Ophism, and was represented in Arkism by the worship of the Crocodile, and other amphibious or marine monsters, by the legends of Tannim, and the Typhon, and by the whole ceremonial of Sivaism, and was perpetuated in the bat-winged devil of Etruria, Japan, and the modern Miltonian orthodoxy. The half-philosophical discussion of the evils flesh is heir to has produced Ahrimanism, Manicheism, and Dualism in general, in all ages; but the special symbolic of demon-worship or diabolism has, nevertheless, always been essentially and plainly Arkite; as may be seen in the tales of the Genii, the Talmud, and the Apocalypse of St John, as well as in the formulæ of the necromancers.†

One of the most interesting, if it be not in fact the most important field of investigation for the theory which I have developed in this lecture, is that remarkable system of religious faith and practice which occupies so large a part of

* See Dean Stanley's graphic description of the serpents in the tombs of the Vale of Kings, back of Thebes. The further you penetrate swarm jackal gods, monstrous genii, good and bad, the Goddess of Justice with her feather, barges carrying mummies over the lake, and *more than all*, everlasting convolutions of serpents, in every possible form and attitude, human-legged, human-handed, crowned, entwining mummies, enwreathing or embraced by processions extending down whole galleries, so that meeting the head of the serpent at the top of the staircase you have to descend to its very end before you reach his tail. (Sinai and Palestine, page 44. See also Jour., Feb. 5, 1867.) One of the most curious instances of this serpent-worship in Egypt is a picture of a serpent stretched at full length upon a boat, reaching nearly from the stem to the stern, and holding in its mouth, by the ring, the sign of life. It occupies the place due to Osiris.—See Appendix to p. 340.

† On the mystical compounds of Bar, in the Proc. Amer. Philosoph. Soc., July 14, 1865.

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the continent of Asia, and is believed to be professed by a large majority of the whole human race, I mean the Buddhism of China and Thibet. This system when examined is seen to be Arkite in the highest degree. It is no wild vagary of an excited fancy that allies two such apparently irrelevant trains of thought as those suggested by the hierarchy of the Grand Lama in his capital at Llassa, and the Apocalyptic 'Lamb in the midst of the throne" before whom the four-and-twenty elders and the hosts of the New Jerusalem fell down and worshipped. The very name of the most ancient capital of Arkism is still retained as the name of the central province of its latest and completest representation—ThIBeT. We have little need to go back to its ancient records, we may study it here in all its details, developed to the highest pitch. And from this as a vital centre we may trace its radiating traditions and its proselyting ceremonials to the farthest limits of the East, throughout Mongolia, China, and Japan, amongst the Polynesian islands, to California, Mexico, and Peru. Everything grows clear,—the pagoda and its dragon—the Marai and its tabu—the shamanism of the northern zone—the teocallis of the New World.

The Druidism of Europe, however, is only the western representation of the Lamaism of the East, which continues to exist and develope its infinitely prolific germs of variation and transmutation in the Greek and Roman Churches of Christendom and in some of their Protestant offshoots. It is evident that the Legends of the Saints are to be rescued from contempt, and explained, only by reference to the spirit of Arkism, which has thoroughly and energetically inspired the Church of Christ; inventing perpetually new dresses for the old symbols, and recommending them thereby to new classes of society, or to new sections of the heathen world. A perfect harmony can thus be established between the stories of the cloister and the sagas and folkslore of the hearth; between the mythical St Christopher and the equally mythical William Tell.*

* A Jesuit priest in the middle of the seventeenth century, published a pamphlet in Berne showing that no such person as Tell ever existed. He was driven from Switzerland for this offence. But the most laborious researches in the convent libraries of Switzerland have failed to afford the

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And this brings us to an astounding prospect—if our eyes be open. What is this new religion which is sweeping over Catholic Christendom like a storm of sand, obliterating the old landmarks and sinking out of sight the temples built to Christ? This worship of the Virgin Mary—what does it mean? Half-educated preachers will give a commonplace and vulgar explanation of it. But they are schoolmasters, not savants. There must be some deep-seated cause for such a phenomenon—it must have its philosophical statement. Why does this new worship flourish in France and Spain and not in Bavaria, Austria, and Hungary?—in the homes of the druidic Celts, but not in the habitat of the Sclavonic and Germanic races?

I answer: because this adoration of the Virgin Mary is no new mystery, but the revival of an always existing and most ancient system of religious ideas. The Virgin Mary, Queen of Heaven, Mother of God, Mater dolorosa, of the Bull of Pope Pius the Ninth, is identical with the Mary mother of Jesus in nothing but in name. In all other respects she is the Venus-Astarte-Isis of the old mythologies. Nay, in name also,—for she is the βαρι or sacred ark of Osiris itself. A thousand circumstantial coincidences go to prove beyond all reasonable doubt that the ark was regarded as a virgin mother of the Noah, the first and greatest of the gods. In all nations, in all religions, the myth of the man-child born of a virgin keeps alive this tradition of the ark, and fresh humanity. She is worshipped on the first of May, when the leaves grow green and the rose-buds swell and the birds'-nests fill with eggs. In Rome she is the old Egeria. In Spain they seat a young girl dressed in white upon a throne and seek about her for Maia, the ancient heathen tutelary deity of sailors. Upon the Rhone the young girl still retains the name of Maia. In England the Queen of May and the dance about the pole are inseparable traditions. In Languedoc they sing strange verses which will well repay grave study. On every

slightest evidence of the existence of Tell's family or person; the list of Austrian governors preserved at Vienna does not include the name of Gesler; the Scandinavians have a precisely similar legend; the history of Switzerland shows that its independence was the work of the nobles and not of the peasantry; and the whole story of the apple, coupled with the name of *Tell*, has a purely Arkite look.

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hill-top looking out upon the sea 'Our lady of good succour' has a shrine of pilgrimage for sailors safely come to port, or for wives when tempests howl across the sea. No one can stand upon the rocky summit of the *Marie de la Garde* overlooking the ancient Phocæan seaport of Marseilles, and watch the pilgrims toiling up those steps worn in the rock by millions upon millions of praying feet, without a complete conviction taking possession of his soul that this has been a shrine of prayer to some more ancient Mary than her who suckled the infant Jesus only eighteen hundred years ago. Nor will the traveller find this conviction lessen when he perceives that the most famous images of the Virgin Mary, like those in the Crypt at Chartres and the monastery at Einsiedlen, are *black*, and very old—and that the local tradition assigns to them a heathen or Druidic origin. We need not be shocked at the coincidence of Jesus' mother bearing this aboriginal Arkite name, for it had become by that time widely spread as a proper name for women, not only among the Hebrews but elsewhere. But when we meet with it in what seems otherwise like fable, for instance, in the Maia Virgin mother of the Hindu Crishna, and in Miriam the motherly sister of Moses, we have a right to add it to our list of ancillary Arkisms.

Still, all this opens up a grave subject for discussion, and one which I desire to state in such a way as may least offend weak consciences. The question is, how far this Arkite superstition can be traced backwards in Christianity towards its starting-point? To what extent the pristine Arkism of the more ancient world, appearing and reappearing through preceding ages, Proteus-like, in many forms of worship and systems of philosophy, appeared once more in Christianity?

Many an ardent disciple of Jesus Christ has come to feel that there is something in the Gospels that he cannot comprehend,—a certain element of the traditional mixed in with the great history of that Redemption. And that this slumbering sentiment can be awaked in many hearts is proved by the immense reception of such books as the Ecce Homo, the Vie de Jésus, and the Characterbild Jesu, within the last four years. Nor can the utmost pressure of that pillow of Orthodoxy stifle this innocent Desdemona.

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We must know. We must invent some sieve to winnow out the chaff—if chaff there be—from the all-precious wheat of our dear faith, from which that bread is made of which if a man eat he shall never die. These literalists that thunder from our pulpits are stupid or crazy Grahamites, pretending that the husks are needful for our weak digestion.

Will such a theory as this which I have tried to formulate before you this evening—will this old Arkite system of ideas serve us for a sieve? I am afraid to specify such items of the gospel history as the walking of Jesus on the water, the sinking of Peter when he tried to do the same, the appearance of Noah's dove at John's baptism of Jesus, the curious triplicity of Peter, James, and John, and the re-appearance of Jannes and Jambres in the names of John and James; the selection of Peter as the one on whom the Church was to be built, &c., &c.; because they seem such integral parts of the history. But when we come to the lesser writings of the years subsequent to the Master's disappearance, I have no hesitation in calling such a story as that of Peter's vision, recounted in the Acts, an Arkite myth. Why should a sheet, filled with as various a multitude of living things as that which the ark of Noah is said to have contained, be let down out of heaven precisely upon *this* apostle's head, and on no other, unless it were because *by name* he typified the Ararat? Nor can I view in any other light such an allusion as that which Jude makes to the contention between Michaël and the Devil for the body of Moses which was buried by Jehovah on the top of Pisgah. Still less hesitation can I feel in handling with the freest criticism such an evident mythical rhapsody as the Apocalypse, ascribed by the fathers to St John,—magnificent and touching as it is,—full of sublime reinforcements for the spirits of the persecuted saints, and of the heartiest warnings and persuasions for us all to-day.

But how can the discoveries of truth hurt such a book? Nothing has so completely damaged its authority even with the orthodox doctors of the Protestant Communions, as the apparent impossibility of clearing up its meaning, or of detecting the source of that element of the enthusiastic and *bizarre*, which overshadows all its beauties and sublimities to so many earnest Christian minds. Looked at, how-

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ever, from the stand-point I have taken, this book assumes a reasonable shape; its fancifulnesses regulate themselves; there is meaning in its symbols; they were comprehended in the early centuries of the Christian era. If we have lost these mystical traditions, we may recover them; I have tried to show you how. Look at that marvellous picture with which the Apocalyptic writer opens the twelfth chapter of his immortal drama:—'And there appeared a great wonder in heaven; a woman clothed with the sun, and the moon under her feet [as in the Virgin of Murillo in the Louvre], and a crown of twelve stars upon her head; and she being with child cried, travailing in birth, and pained to be delivered. And there appeared another wonder in heaven; and behold a great red dragon . . . stood before the woman . . . to devour her child as soon as it was born. And she brought forth a man child . . . and her child was caught up unto God and to his throne; and the woman fled (with wings) into the wilderness . . . and Michael and his angels fought against the dragon . . . and the serpent cast out of his mouth a flood of water after the woman that he might cause her to be carried away of the flood; and the earth helped the woman and opened its mouth and swallowed up the flood . . .' Let what interpretation you please be given to the body of this complicated metaphor—let the woman be the Christian Church, and the dragon the Roman government, and the flood its persecuting violence, and the helping earth society at large, with all its remedial influences and spiritual necessities—I have nothing to urge against it. But I maintain that the principal details of the dress in which the metaphor flashed splendidly before the inspired writer, and appeals for sympathy and admiration to ourselves, is a dress borrowed from the universal Arkite sentiment of the pre-Christian and pre-Judaic mythology, a sentiment which still found ample opportunities for gratifying all its cherished traditionary ideas in every kind of organization whether of the heathen priesthoods or the Christian heresies.

Therefore it lives to-day. And precisely by the secret masonic order of the Jesuits devoted to the Papacy is it reinaugurated and rehabilitated in this revival of the worship of the Queen of Heaven, the Mary of the Moon. How far the wide-spread organization of Free-masonry

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conceals for its higher initiations, knights templars and what not, the traditions of the ancient creed, I do not know; for I am not a mason. But this I am quite sure of, that Free-masonry must offer to its initiated another field for investigating living Arkism. Its gavel and trowel are sacred symbols of the mountain; and its other insignia, the square and the compasses, are equally easy to read in the light of architectural mysticism. Its primeval grand-master, Solomon, the Man of the Cell, called himself the QELT (קהלת) or Cabalist.* Many branches of Free-Masonry have been produced in the course of ages, known by different names, and various in spirit, language, and rites, according to the temper of the times, the blood of the members, and the progress of ideas. But so far as their interior history has ever been revealed, the revelation has exposed the elements of Arkism as the stuff of which originally their essence was composed. No phenomenon connected with the existence of man has excited more curiosity and speculation than the universal spread of not only the spirit, but the language of Free-masonry around the world. It can only be explained by reference to the simplicity of its formularies, and their preservation from the remotest antiquity, as modern representatives of primeval Arkism.

And now if Arkism can do something like this service for religion, what can it do for science? If it does nothing but sweep away the rubbish of geographical and historical names which encumber the study of the habitats and migrations of races it will have done much. If it does but wipe off from the solid body of human zoological research that cracked and dingy varnish of traditional philology, it will give us a chance to see a picture which ethnology can then describe. If it only teaches us one truth—that the names of nations are not names of country or of race, but names of worship—it will at all events prepare our way to take up the whole subject of race afresh, unfettered by prejudice, with no old Hebrew, Greek, and Latin scales upon our eyes.

* QEL, קהל, εκκλησια, kirk, church, as well as the verbs which correspond to them, and from which they are commonly supposed to be derived, viz. קהל, καλεω, select, collect, &c., find their explanation in the Arkite-Cabala.

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This Arkism will do, I think. It will explain how the priesthoods of the **BAR**, the **TAB**, the **TOR**, the **CEL**, bestowed these names not only on the symbols and idols that they worshipped, but on all things and persons attached to those worships, on the priesthoods themselves, and on the nations who adopted them. Thus were these *sacred epithets* transferred from thing to thing, from man to man, from place to place, from age to age, until one universal Arkite nomenclature penetrated everywhere, preceding and underlying others that came afterwards. There could, therefore, be Tar-tars worshipping the Tor in Siberia, and Berbers worshipping the Bar in the Sahara; Chaldees or Mithraic Celts in Armenia and Galatia, and Culdees or Christian Celts in Scotland; Iberians in the Caucasus as well as in Spain; Germani in Europe, Caramanians in Asia, Garamantes in Africa, all of them of different stocks, but worshipping in common the Cær of Mannus; Persia, and Prussia, and Paris, and the innumerable Bars and Berris in France and Italy, Britain and Burgundy, and a thousand other derivatives of the original worship of the Bar.* I take these names at haphazard, not to assert anything respecting the true etymology of any single one of them taken by itself, but simply to show the kind of thought, the run of the argument, suggested to us by the question: What can Arkism do for science? I feel sure, however, that the greater part of all geographical names carry traditions of religious foundations, emigrations, feuds, heresies, and fresh developments of mystic and philosophic thought. I am quite certain that such much-disputed names as Celt and Scyth are essentially religious and not political denominations: and the bearing of all this on the science of ethnology I need not stop at this late hour to expatiate upon.†

* The ship which one sees on the coat lappets of the government officials in Paris was the ancient sign or *totem* of the place in Druid days. The *Isle de la Cité* sacred to the worship of *Notre Dame*, was the shrine of Isis, the *baris* or sacred bark of Osiris. The celtic god was *Hesus*.

† Others are coming or have come to the same conclusion. I see in an extract from the *Ausland*, one of the best periodicals of Germany, an account of Dr Ludwig's paper on the aboriginal history of Mexico, translated by Dr Andree of Bremen, in which the learned author 'seeks to establish new and interesting views of the migrations and names of the Tulteks, Chichimeks, and Aztecs, which names he considers rather as

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A few more words and I have done.* 'So wide a generalization of facts from all departments of history in the past, and human life in the present, centred upon so small a group of facts as that which has been described above, under the name of the Arkite symbol of the mountain, ship, and water, will necessarily incur the charge of one-sidedness. The theory will be said to attempt too much, to run itself into the ground, to break down with its own weight. It will find arrayed against itself other theories of primeval history, laboriously invented by the best thinkers of the last hundred years, each claiming to explain the rise and development of human thought and culture, as well as most of the anomalous and eccentric, fantastic and absurd, misapplications of men's views of the supernatural and of nature. Of no part of science is it a truer saying than of this, that no theory can be true that does not accept, ally, and illustrate, all that is true in all other theories; embodying their generalizations within its own, and differing from them only in the superior expansiveness of its field of vision. Modern geology is neither Huttonism nor Wernerism, but an eclectic combination of both. Sociology, as now best taught, recognizes the justness of every form of government in its natural place. The science of physics is a compound precipitate from the relation of the most prosy parts of materialistic natural history, and the finest transcendental or metaphysical notions respecting essence, and the mysterious forces of the entire universe. Even theology is being stimulated from its sleep of ages by stimulants administered by unbelieving savans. Isolation is no longer possible for the investigator; and his theories must be in good society, or be tabooed.

Archæology has been based exclusively on Astrology by some of its best writers. Undoubtedly there is a department of astronomical archæology; and the genius

political denominations (like nobility, people, priests), than as designations of distinct nationalities. . . . The Aztecs Mr L. considers as a caste of priests,' &c. Confined as such an opinion is to a very small locality, it makes a sensible addition to a broader statement which is intended to cover the entire world.

* The following paragraphs are reproduced from the notice before quoted, in the Proceedings of the American Philosophical Society, July, 1865.

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and learning displayed in such a masterpiece as Dupuis' great work were far from being thrown away. On the contrary, it is as much a cabinet of new-discovered facts and truths, as Boucher des Perthes' Celtic Remains, or Tyndall's Lectures on Heat. But it does not follow from all the wonderful coincidences between mythologies and the phenomena of the sky, that the aboriginal mythology was astronomical. Man's eyes were early dazzled by the light of the sun, and his heart melted by the beauty of the moon; but an earlier worship may have existed for his soul, and centuries of intellectual development may have been needed before the order of the stars could take so strong a hold upon his imagination, as to subjugate his reverence, and systematize his hopes and fears into the Mithraic and Sabæan forms. Some wider synthesis must include Dupuis. The very nomenclature of sun and planet worship requires an older worship for its explanation; so does its architecture; so does its symbolism. The ring, the bird's tail, the carpet of Mithras, in conjunction, find no account of themselves in astronomy. Fire-worship was evidently adopted and carried in arms by an older mountain-worship. If the great triliths of Stonehenge have their tops cut down to the plane of the ecliptic, the central sacrificial stone, sloped for the draining off of human blood, is a structure suggestive of quite a different system —that of the Arkite loggan and ambrose stones of the whole Druid world. Supposing Turner's views respecting the great pyramid to have been made mathematically certain by the memoir of the Astronomer-Royal of Scotland, Turner himself insists that the great pyramid differs from all other pyramids, in Egypt and elsewhere, in this very fact, that it alone is astronomical; the rest must give some other account of themselves. Arkism embraces and explains astronomical archæology, but the latter cannot explain the former.

Then there is the Phallic system of Kanne, and all the learned writers of that school. A theory of antiquity not to be despised—a grand summary of indubitable facts —it has a philosophical basis to stand upon. It has immense resources in philology. It is written with the freest and coarsest hand on the monuments of east and west. It explains, and is explained by, the experiences of monastic

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life. It appeals for justification, in fact, to the strongest of all the energies of nature, both physical and spiritual, when it affirms that the first astonishment man felt was at himself when he began to cohabit with woman; and the second, at the birth of his first child; that thus all worship sprang from love, and all its symbols from the organs of reproduction; replaced afterwards by such objects of nature as mountains, caverns, and seas, for grandeur's sake. If, however, the nomenclature, the architecture, and the ritual of Phallism can be shown to have had an anterior existence, unmodified by the gross sentiments of animal love, and to be explainable on a hypothesis, not personal to the individual man, but common to mankind, then the Phallic theory, like the astronomical, must take a secondary rank, and be accepted only for what it is worth within its just limits; while its formal origin and outer development will be referable to that older and more general Arkism, whose language it had adopted, whose symbols it had modified, whose truths it had degraded, whose pure and simple worship it had debased and defiled, but still continued to illustrate.

The Ophite theory is considered, by the authors of such books as the "Serpent Symbol," all sufficient to account for the prehistoric religious history of man. This seems to be a most presumptuous supposition. The theory has to do with no grand event in history, which might be supposed to have made an indelible impression upon the life of mankind; nor with any general idea of the sublime or terrible, germain to worship; nor to any master sentiment of the human heart,—for fear is not so strong as love, nor so instructive as curiosity, nor so inventive as taste. The theory involves a mere classification of one kind of archæological facts, requiring the simplest treatment, and barren of all results but one, namely, a certain addition to the mass of evidence, otherwise collected, that some mysterious Arkite intercourse has had existence between all the known races of the world. Beyond this, Ophism has no story to tell; and instead of elucidating antiquity, adds to its confused obscurity. But Ophism is one of the great facts of history, notwithstanding; and enters not only largely but naturally into the composition of the Arkite theory, which fully unfolds it, suggesting for its existence

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a new and satisfactory cause, and explaining all its forms and variations perfectly.

Then there is the great archæological problem of Devil-worship, for so many portions of mankind, the terrors of shamanism, the darker or fearful side of fetichism, all so nearly allied to serpent-worship, and all so nearly explainable by reference merely to the limitations of human will and human happiness, but none of them quite so. What shall be done with the unexplained residuum? Archæology claims it; but which archæological theory shall take charge of it? Certainly none of these theories of departments, departmental theories,—we need the new name,—already alluded to. No. To learn the language of Fear-worship, we must go back to the very beginning; to some age of weakness, calamity, and fright; to some irruption of wild beasts, or conflagration, or deluge; to some event so overwhelming that it could impress no less than all mankind, for a time no less than all the ages, the memory of which would be a simple figure of destruction and salvation combined, the symbol of which would be the intertwined names of God and the Devil. In the mountain and the ship, which rescued mankind from destruction in that event, we have the explanation of the origin of all Phallism and Egg-worship. In the waters which came so near destroying him, we have the explanation of the origin of all Ophism and Devil-worship. Both were made ornate in the tasteful idolatry of Greece, scientific on the clear-eyed mountain-land of Persia, and spiritual among the justice-loving seers of Palestine. Before Arkism, of course, was universal fetichism, like a great chaos, without law, or any method of self-expression; and after Arkism came all forms of thought and feeling possible for man to invent, but all budding from this Yggdrasil, and bearing flowers and fruit after the pattern of its undying life.

It is not, therefore, in violation of the great canon of modern science, but in obedience to it, that the Arkite theory sets up its claims to universality.

What the great event was which so impressed the worshipful mind of the human race, or whether the chronic relationships of mankind in the earlier stages of their existence to mountains, or firm land in general, to boats, rafts, or stationary crannoges, and to all waters in general,

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may not compensate for the doubt which physical science cannot help throwing over the story of a Noachian deluge, —it will be hard to demonstrate. Geological investigation has as yet discovered no traces of a real event, such as is described in Mosaic and other records of the barbarous ages of the world. That science, however, has long taught the alternate submergence and emergence of dry land; and all its latest teachings are of the extreme antiquity of human life upon the earth, and of man's contemporaneous existence with other now extinct animals, during a glacial epoch, involving probably great floods, and opening into the comparatively modern age at the beginning of which men lived upon the waters, instead of on the land. The Arkite theory has nothing to say on these matters. It starts from a given point, the already established worship of the mountain, ship, and flood, without explaining how this worship was begotten; only denying that it was developed intellectually out of Fetichism, Ophism, Mithraism, Phallism, or any other known mythology; and affirming, on the contrary, that it explains and embraces them.'

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APPENDIX.

Appendix to page 12.

CLASSIFICATION OF THE SCIENCES.

I. General Sciences:—
1. Philosophy. 2. Bibliography.

II. Mathematical Sciences:—
1. Mathematics. 2. Astronomy. 3. Meteorology. 4. Geodesy. 5. Geography. 6. Physics, leading to the

III. Inorganic Sciences:—
1. Chemistry. 2. Mineralogy. 3. Metallurgy. 4. Geology. 5. Palæontology, leading to the

IV. Organic Sciences:—
1. Biology. 2. Botany. 3. Zoology. 4. Medicine, leading to the group of the

V. Historical Sciences:—
1. Chronology. 2. Mythology. 3. Archæology. 4. Ethnology. 5. History, leading to the

VI. Social Sciences:—
1. Sociology or Statistics. 2. Manufacture. 3. Commerce. 4. Defence. 5. Equity, leading to the

VII. Intellectual Sciences:—
1. Language. 2. Belles Lettres. 3. Fine Arts. 4. Metaphysics. 5. Education. 6. Philanthropy. 7. Worship.

VIII. Personal Science:—
1. Biography.

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Star. It is remarkable, however, that the star so persistently worshipped by men kneeling in little dishes, on the columns of the XIX. Dynasty temple at Abydos, is always five-pointed, and made by the meeting, not of five triangles at their bases, but of five plain bars or spokes; and that

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the top one is always upright, while the two lower ones form two straddling legs. The remaining two are in their places so as to divide the circle into five equal segments. But there are instances on the monuments where these last two arms form a continuous bar across the apex of the two legs; and then the symbol approximates the form of the sign of life. See Appendix to page 236, below.

Appendix to the last paragraph on page 120.

THE latest important discovery bearing upon the theoretical relationship of man to the quadrumana has been made by M. Edouard Dupont, to whom the Belgian Government has confided the task of continuing the researches of Dr Schmerling in the cave and soil deposits of the Meuse. M. Dupont had examined (up to August of 1866) twenty-four caverns situated on the banks of the Lesse, an affluent of the Meuse, in the neighbourhood of Dinant.

The quaternary deposits of this region are thus classified :—

1. Siliceous (90 per cent. silex) greyish-yellow brick-clay; '*loess.*'

2. Yellow clay with angular pieces of local rocks; '*block clay ;*' at the base of which are found remains of reindeer.

3. Sand, with subdivisions of gravel, containing human remains (the oldest found as yet), and supporting a stratum of sandy clay, with calcareous concretions; '*lehm.*'

4. Rolled stones, with intercalated lens-shaped layers of sand. Then follows floor of rock, of various geological antiquity, which has furnished the angular pieces of the block clay.

Of these four quaternary deposits, No. 3 has repaid the researches of M. Dupont with a very remarkable human jaw, which he exhibited at the International Palæontological Congress at Neufchatel in August of 1866, and was described by him as having been found in a cavern called the Trou de la Naulette, in the left bank of the Lesse, 80 feet above the river bed,—in the back part of the cave, under a covering of ten alternate layers of stalagmite and clay,—in a layer of sand, and in company with a *cubitus* of an individual of small stature, a fragment of bone pierced by the hand of man, and numerous bones of animals: marmot, mammoth, rhinoceros, reindeer, chamois, &c.

The alternate layers of sand and clay and stalagmite, which form the floor of the cave, belong to formation No. 3. The block clay formation No. 2, which, outside the cave, upon a natural terrace in front of its mouth, is 10 feet thick, thins so rapidly inwards, that not a trace of it is to be found four paces from the mouth. This block clay yields here bones of the horse, reindeer, &c.

The *Naulette jaw* has a very remarkable shape. All the teeth, the vertical branches, and the hind part of the right horizontal branch, as far as to the second pre-molar, are wanting, the residue is in excellent preservation, even to the walls of the alveoles. Looked at in front, this jaw does not possess those little well-pronounced details, which commonly mark the insertions of the muscles. The whole is smooth and rounded. The chin region itself is vertical, or rather retires upward, without, however, making it certain that the chin was prominent. Moreover, the

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horizontal branches, as well as the chin, have an exceptional thickness, that is, relatively to the feeble elevation of these branches, so that it seems as if there were a kind of balance between the thickness and the height of the bone.

Looked at from behind, it offers such a proclivity from behind forwards of the parts about the symphysis, that one is obliged to remark a prognathism entirely animal. The apophyses are not indicated, the lateral fossæ are well pronounced, and the rim of the chin is reduced to its minimum.

Seen from above, this jaw confirms, by the disposition of the sockets, the impression produced by its prognathism; the sockets of the eye-teeth, although very close to the sockets of the incisors and the molars, remind us of the disposition of the teeth in the jaw of the monkey. In effect, the socket of the eye-tooth is very vast, and bulges on the external face. But what seems still more strange is, that the three sockets of the great molars absolutely present the typical order of the monkey jaw, the third socket being greater than the second, and the second than the first. The socket of the wisdom-tooth shows the print of five roots; finally, the socket of the second pre-molar has an oblique direction.

It is impossible to mistake (as Professor Vogt remarked after the reading of the memoir) the singular importance attaching to this relic of the human frame. Judging by the connection of the teeth, the jaw is entirely human; there does not exist the least interruption of continuity, not the smallest space between the eye-teeth and the molars and incisors. But, on the other hand, the fact that the molars augment in size backward instead of forward is a most curious feature. In the human jaw the first molar is the largest, and the wisdom-tooth the smallest and often entirely wanting. The absence of the apophyses (géni) is also very strange. As for the chin itself, it is intermediate in type between that of the man and that of the monkey, being vertical; whereas that of man advances, while that of the monkey retreats, or is completely effaced.

Besides this remarkable jaw from the third quaternary deposit of the age of the mammoth, Monsieur Dupont presented at the same time a second human jaw, very different from the first, possessing none of its peculiarities, and of a much later age, although still of high antiquity, for it was imbedded in the deposit No. 2, that of the reindeer age. It was found in one of the grottoes of Furfoos, called the Trou du Frontal, the galleries of which have served for a graveyard, and contained when examined a quantity of human bones, related to 13 skeletons, disseminated irregularly through the stalagmite and coarse mud. Near these bones were found twenty flint knives, many fossil shells, pierced for suspension as an ornament, and a hand-made urn of very rude pottery. A great slab of dolomite was found buried in the clay near the mouth of the grotto, and no doubt once served as a door. The block clay just inside the open mouth of the grotto, and in front of this door, contained fractured bones of reindeer, brown bear, chamois, beaver, horse, &c., mixed with thousands of flint chips. Broken for their marrow, these bones all bore the trace of fire. Among these animals thus used for food, were foxes, horses, and water-rats in abundance. The human bones inside the cave exhibited no mark of fire or of fracture.

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This cave of the age of the reindeer is a case, therefore, of the same kind with that of the grotto of Aurignac, which is however immensely older, belonging as it does to the age of the great cave bear.

Monsieur Dupont has found the succeeding age of polished stones also represented in one only of these caves (Pont à Lesse). No reindeer remains are seen here. The men of the later epoch fed upon the wild boar, the goat, the stag, and the water-rat; but not upon the horse. The presence of some human bones belonging to a youth, mixed in with those of animals used for food, would lead to the suspicion of cannibalism, were it not that these human bones were neither broken intentionally nor marked with fire.

In one other cave, however (Trou des Nutons de Gendron), and in a layer of earth above formation No. 2 above, he found the bones belonging to 17 skeletons, all of them broken, but so arranged that the fragments of head, then those of the trunk and arms, then those of the legs, were met with successively in a space of seven feet. He then found a second, a third, and then a fourth range of three incomplete skeletons. The first range contained only two. After the fourth a little skeleton was placed transversely. Then the longitudinal arrangement was resumed with two skeletons, the heads towards the mouth of the cave. Then came another little transverse skeleton. Finally, two more longitudinal skeletons. At the entrance was found a little flint flake and three pieces of coarse pottery.

Appendix to page 136.

THE distinguished secretary of the Royal Geographical Society considers it an historical fact that the great movements of the Tartar race in the 12th century, under Togrul Beg Genghis Khan and other chiefs, keeping Asia in disturbance for several generations, among other results had the effect of pressing upon the Siberian aborigines belonging to the Circumpolar race, forcing them to migrate beyond Behring Straits as far as the western coast of Greenland, at that time occupied by 300 farms and villages of northmen, who had settled there under Eric the Red, at the end of the 10th century, all of whom these invading Esquimaux destroyed. He depends for his theory, that these Norsemen were not pirates but settlers in Greenland, upon the proof afforded by Runic inscriptions, and the existence of stone-dwellings and churches in ruins, furnished with large bells, and almost magnificent enough to be styled cathedrals. An east and west belt across Siberia and North America of ruined stone-dwellings, in which are found bones of animals cut with flint instruments, &c., he thinks were the successive halting-places of the great Siberian migration. Mr Markham says that the appearance of the hostile strangers in Greenland took place suddenly in the middle of the 14th century, without boats; and therefore it must have come from the north by land and not across from Labrador, where Esquimaux are known to have been settled in the 10th century. The ruined *Yourts* still found on Cape Chelagskoi, in northern Siberia, mark the commencement of the long march, which must have been accomplished by following some unknown polar lands, such as those high mountain-lands reported to Admiral Wrangell north

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of Cape Chelagskoi, and seen by Admiral Kellett N. and N.W. of Behring Straits. (Proc. R. G. Soc. ix. p. 88.) Mr Lubbock, president of the Ethnological Society and a higher authority in such matters, opposes Mr Markham's views, with a theory more in accordance with all the known facts. He considers the Lapland or Siberian race as the aboriginal race of Europe, driven northward by the Celts and Teutons; as the American-Siberians or Esquimaux seem to have been driven northward by the more powerful Red Indian. He does not credit the assertion that Greenland was empty at the coming of the Norsemen; nor that miserable Skrœlling immigrants could drive off Icelanders; nor did he think, with Kane, that the Arctic highlanders were a race in process of extinction (p. 102). Mr Crawfurd doubts the whole history of the Norse settlements of the 9th century, and ascribes the Runic inscriptions to the occasional visits of pirates, but he could not explain the *bells;* he considered Greenland always inhabited by Esquimaux, and that these were *not* of Asiatic origin (pp. 102, 103).

Mr Owen believes that the study of the Esquimaux will give us our best ideas of the life of the aboriginal inhabitants—the cave-dwellers—of Europe (p. 100).

The Esquimaux at the mouth of Mackenzie river and round fort Anderson or Anderson river, sleep naked between deer-skins, and prefer cooked food, although they occasionally eat raw meat and frequently raw fish. Before leaving the river (Nov. 30) for their winter homes on the coast east of the Anderson inlet, many of them make large câches of deer-meat secured in the ice upon the river, against their return in April; the animals beginning to go north in May. When the ice goes off the men hunt reindeer on the slopes and summits of the river-bank and float the carcase (buoyed by an arrow) down to the fort. Later they spear the reindeer as they cross the river; one expert canoe-man will spear 50 at a time. These Esquimaux are peaceable and fast improving; they buy guns and ammunition, are excessively fond of tobacco, and use kettles, steel-traps, wolverines, knives, files, blankets, the flint and steel now instead of the fire-producer. They also work well in parties with the Hudson Bay Indians farther south. Their game consists of five kinds of fox, two bears, a few beavers, very few lynx, musks, martens, musquash, wolves, swan, and a few musk oxen, which last are pretty numerous S.E. of them. (Mc Farlane, to the R. Geog. Soc., March, 1865, p. 130.)

The Esquimaux of the Labrador coast in 1864 (discovered by Cabot in 1497) consisted only of 200 individuals chiefly living near Esquimaux Bay, or Hamilton Inlet. There are 1600 British colonists. In the interior there are 'mountaineers,' a branch of the Creek Indians (?), scattered tribes. At the August fair, on Esquimaux Bay, you may see the birch canoe and seal-skin boat side by side. The Esquimaux are more cleanly than the British settler, live in nice houses, with well-stocked English cottage-looking dressers, and little ornaments; they wear the English dress, and are invariably Protestants. In 1864, 60 Hudson Bay Red Indians crossed the Straits of Belleisle and anxiously asked if Micmacs were there, saying that they were *bad* Indians, and that their own hunting-grounds were exhausted, and 300 of their tribe would like to settle in Newfoundland. Their fear of Micmacs was hereditary, because their Red ancestry had been exterminated by the inferior Micmacs when the English settlers

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gave the latter guns. Micmacs and mountaineers are invariably Catholics. (Cap. Hamilton, Proc. R. G. Soc., March, 1865, p. 133.)

Mr O'Callaghan (in the Proc. Geo. and Pol. Soc., W. R. of Yorkshire, 1863-4, p. 312) says that the ancient Britons, previous to or during the Stone period, buried their fat and butter in wooden vessels in bogs. 'The peat-moss seems to have been used as a cellar or larder before the discovery of the curative property of salt, or even of its existence in this country; for the Greek historians tell us that salt was one of the imported articles used in barter for the native metals.' 'Butter, cheese, and tallow are frequently found sunk deep in Irish bogs, sometimes in large masses, converted into a sort of stearine, although generally every particle of the wooden vessel which contained the substance has utterly disappeared.' Wilson, quoting Train for a ball of fat or bannock of tallow, weighing 127 lbs., found in a peat-moss, says that it indicated the spot where some large animal had perished (Prehistoric Annals of Scot., p. 31). This is absurd enough.

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Barzil, Hebrew name for iron. *Selas*, a stone, is probably the second syllable. The first syllable occurs in the name of the mythological inventor of metallurgy, Tubalcain. The *Tu* of this name is a prefix, as we see from its Roman form, Vulcan. The Cain is equally a separate syllable from the Bal (Bar) as we see from its separate existence in other proper names, as Cain, the son of Adam, Cainan the grandson of Noah, &c. It is undoubtedly the Hebrew word **CEN**, *cohen*, a priest. Cain offered the first bloody sacrifice of fire upon an altar, according to the Hebrew tradition. Vulcan means, then, priest of the Bal (Bar); and Tubalcain, priest of the Tabal (Tabor); the Greeks reversed the order of the syllables and said Centaur. Every epithet connected with this important manufacture reveals some Arkism. The *hammer* is a *cabar* or cabalistic thing, sacred to the mountain, *tor*, the god Thor. It was carried by all the deities of Etruria. The *anvil* is an *om-bar*, the very form of which reproduces the ship-mountain symbol. The Greek name for iron, *sideron*, means 'that which belongs to the sacred tor' (*s-tor-n*). *Ferrum*, in Latin, is the reverse of Om-bar; or is simply *bar*, with a neuter noun-sign like the final *ma* of Greek substantives.

One of the most curious circumstances connected with the discoveries of the bronze age, is a fact made plain by the researches of Dr F. Wibel. (*Die Cultur der Bronzezeit*, Kiel, 1865, p. 24, quoted in Die Pfahlbauten des Neuenbergen Sees von E. Desor. Frankfurt am Main, 1866, page 75.) The art of tempering bronze seems to have been known to the prehistoric smiths. Bronze to be malleable (*cold*) must not contain more than 5 per cent. tin; but *hot*, it is malleable with 15 per cent. Bronze, to be malleable with a still higher per centage of tin, must be suddenly cooled, according to the process of d'Arcet. It then receives a malleability which is not proper to it, and cannot be given to it by slow tempering. Now, as they have found in the lake dwellings some articles of bronze, containing ten per cent. of tin and more, and yet hammered

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into shape, it follows that the tempering of bronze must be almost as old as bronze itself. It is surprising, then, that the people of the Iron age were not in this way led to the discovery of steel, which, however, just the reverse of bronze, is hardened by plunging, and softened by slow cooling.

M. Mariette informs me that the arms of the 11th Dynasty, mentioned in his Aperçu, were not of metal. The swords are made of hard, dark, Nubian *wood;* the arrow-heads and spear-points, of *fish-bones*. No copper or bronze armour of so early a date has been discovered. Gold ornaments however have been. Iron must have been known to the early Egyptians; for their mythology contained a fable, that Osiris was slain by Typhon with an instrument of iron, and that the rust of iron was the blood of the murdered god. M. Mariette thinks that this superstition formed the obstacle to the employment of that metal by the old Egyptians; but it seems to me that there must have been something hostile to the use of iron anteceding the superstition and suggesting the myth. Traces of primeval men are beginning to be found in and about Egypt. Caves in the Peninsula of Sinai have yielded flint (or stone) arrow-heads, but have not yet been searched for bones. Other similar relics of the Stone age are spoken of between the first and second cataracts, in connection with recent species of fossils in the post-tertiary clay banks; as, for example, at the Armenian convent opposite the island of Philæ.

Appendix to Lecture VIII.

In Ireland, Minemon, 700 B.C., was the first Irish king who decorated the necks of his nobles with gold torques, and permitted them to wear armlets and bracelets also. But a century earlier (784 B.C.) Tigernach, the 26th king of Ireland, first worked its gold mines and caused one Theodore of Weeklow to make golden clothes-pins for the neck instead of the bone and wooden skewers which his subjects wore. Pins, brooches, collars of gold are amongst the most ancient articles of gold and silver, and from their number we must judge that gold was most abundant in Britain in ancient times. Stream gold and nuggets always attract the savage eye, and are at once convertible to ornamental use. Some of the Irish plates and bars of gold seem to have been beaten out with a stone hammer, and are so rude that they must date back to the earliest antiquity. (O'Callaghan, Proc. Soc., York, 1863-4, p. 317.)

There is an iron age, but no age of gold. All ages have been ages of gold. But in the beginning the savages had advantages in finding it, which their feeling for art was not advanced enough to allow of their turning to a proper use. The iron age is, after all, the age of gold. But each nation has a history which places the use of gold before the perfect use of iron. It is true that iron is destructible, and gold lasts for ever. But this fact is one which bears on the antecedent use of iron, for it makes gold lie in abundance upon the surface of the ground, while it covers iron up in rust and dirt beneath the soil. The earliest money therefore must have been of gold, and money took the earliest stamp of the fine arts. Then golden plates were spread on royal breasts, and grew to be whole panoplies. This was before the Trojan war.

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There stands an ancient barrow in the corner of a field at Mould in Flintshire, called the 'Hill of the Fairies,' and it is much dreaded by the peasantry, especially by night. One chilly evening in the autumn of 1833 an old woman of that neighbourhood was forced by circumstances to pass this awful mound, and what was her horror to behold a spectral figure slowly pacing to and fro upon its top, clothed in a golden coat, which shone upon her like the setting sun. She told the tale, of course, and great was the commotion all along that country-side. The owner of the land determined to remove the terrible barrow altogether. At first the excavations only turned up rude urns of unbaked pottery, containing burnt bones. But at the bottom, what was the astonishment and delightful horror of the ghost-believers to come upon a human skeleton wrapped round the chest with a corslet of the purest gold, embossed with an ornamentation of superior design and workmanship! The precious relic was at once broken up and sold, but the pieces were afterwards recovered from the purchasers, and the corslet may now again be seen, nearly complete, in the British Museum. (O'Callaghan, p. 318.)

The gold ring-money of the Druids is probably the most ancient use to which that metal was placed. But the term money here seems to be inappropriate. These rings are supposed, for many good reasons, to have been sacred utensils, used for swearing troth and fealty on, and used in courts of justice as the Bible is now.

Yet the ring was probably used in commerce by the Phœnicians, and is said to be the shape of money now in Africa. Mr Evans has shown that the concave coins, called 'dish money,' and other types, were in use in Britain and the Channel Islands long before the Roman occupation.

The weapons and tools of the Assyrians and Egyptians were of gold or copper, if we may judge by the yellow colour used in painting them. Bronze weapons found in sepulchres show how that alloy was in use among them. Berzelius believed that Cornwall must have been the sole depôt of tin known to the ancient civilized nations in the west. Coins of the Ptolemies and other Egyptian relics have been dug up in Cornwall; for instance, two bronze bulls, in a deep cut, in the town of Penryn, in 1850, intended for Apis, and in 1853 a bifrontal bust of Isis, in a ditch in Exeter. One or two places still bear Phœnician names. In Ireland the Phœnicians have left a multitude of gold and bronze relics.

But the most interesting relics of the early use of gold are those which have been recently discovered in the tombs of the cemetery of Halstadt near Salzburg in the Austrian Tyrol, the site of perhaps the most important salt-mines in Europe, taking into consideration the remote age at which they began to be wrought, and the intimate relations which were maintained with them by the people of the Italian peninsula. When these graves were made, it was an age of stone for the north and west of Europe. Iron had not yet come into use. The inhabitants of the tombs were probably neither the inside miners nor the outside villagers, but wealthy owners of a better class, perhaps foreigners from Italy, government officials, or visitors, their wives and their daughters. Many of the articles found are female ornaments; and among these are noticeable a number of those curiously embossed and ornamented circular plates, sometimes mistaken for small bucklers, but now known to archæologists by the name of 'disques de chasteté.' Weapons of men however were also

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found, some of them of great price and beauty. One long sword had a handle of ivory. A dagger and sheath of solid gold is particularly remarkable. My friend Mr Desor tells me that he has found facsimiles of some of the more curious specimens on which are visible what seems to be an astronomical emblem, as well as rows of horses and dancing figures in pairs, and idols with spread-out legs and arms, in the Etruscan museums.

For further information respecting the age of gold, see De Rougemont *Sur l'Age de Bronze*. Paris and Geneva, 1867.

Appendix to page 187.

THE numerous prints of the human hand in red paint upon the ancient edifices of Central America have given rise to much discussion as to its possible meaning. I am informed by my friend Dr Goldberg that many of the battle-flags of Asiatic tribes overthrown in battle by the Russian troops, and preserved in the capital of the Empire, show the same sign, the impression of a human hand in red colour. The first of these trophies excited great surprise; the Russian soldiery, to enhance their own reputation for valour, declared that these impressions were made by the standard-bearers, when they grasped their colours with their dying hands, and dyed them with their blood. But the great number of such trophies soon set aside this romantic tradition, and proved that the custom was widespread among the Asiatic nations. In the East it is usual to consecrate a dwelling-house or other structure of a permanent character, by killing a sheep, and dipping the naked hand in its blood, and stamping the wall. It is reported of Mahmoud that on the capture of Constantinople, riding on horseback into the church of St Sophia, he stopped before the door, dipped his right hand in blood, and stamped its impression upon the door-post as high as he could reach. One cannot help recalling to mind the Hebrew custom of sprinkling the door-post at the Passover with blood; and the *rubente dextera manu* of Horace. The hand in a ring, placed at the summit of the standards of the Roman legions, may, therefore, have an Eastern origin. And we must not forget that the ring was an amulet to swear by and to take an oath upon in the European world. The escutcheon of a monastery near Mecklenburg bears a monk holding a ring in his hand. Can this "red right hand" have anything to do with the uplifted faulcion of the Pharaohs on the walls of their monuments, smiting prostrate kings or flying hosts? The flesh of the Egyptian is always painted red in these representations. The sign of life involves the hand in its sacredness. The hand occurs as the sacred letter **t** in the hieroglyphic vocabulary.

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Cuneiform A. The reader would be greatly astonished, I feel sure, to see this letter (with strokes and top bar, however, plain and not wedge-shaped) hanging by a little ring, from the left elbow of a figure kneeling in a dish, and holding up both hands in adoration to a star. It actually occurs thus on the various faces of the 4 foursquare columns of the lately

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excavated temple near the Ramesseum at Abydos. I observed, however, that from the elbow of one of the kneeling figures, wearing a hood and hawk-bill mask, depended, not the cuneiform A, but the five-pointed star which the others worshipped. Underneath the dish in which this one knelt I read the syphon S and the *Anχ;* while under the others were a *chicken* and a plain equilateral upright Christian *cross*, and under these again a horizontal line. This cuneiform A was therefore a talisman like the star, the anχ, &c. See Appendix to pages 309, 310, below.

Appendix to page 278.

AUM. Maurice speaks of plain sculptures of the Trinity at Elephantine. In the Baghavat Geeta (page 80) Vishnu says:—'I am the Holy One worthy to be known. I am the mystic figure **OM**. I am the Rig, Yagush, and Saman Vedas.' Dr Wilkins shows these letters to mean the creator, preserver, and destroyer. (Maurice's Ind. Antiq. iv. pp. 744, 745.) Moore in his Pantheon, p. 413, says that AUM, AOM, or AWM, mean creator, preserver, destroyer, in that order. Sonnerat describes the Hindu Trinity in his Voyages, i. p. 749. Forster says that this Trinity is composed of *Sri-mun-narrain*,—the beautiful female *Maha-letchimy*,—and a serpent (Sketches of Hindu Mythology, p. 12), in which we see mountain (or Noah), the ark, and the water. Maurice calls *Narayen* the supreme God. He says that *Latchmi* is the *Imma* of the Hebrew fabulists. (Ind. Antiq. iv. p. 750.) Coleman in his discussion of the Vedas (Asiat. Researches, v.) says that **OM** signifies God of Gods, and that all Brahmans are obliged to pronounce it internally (not audibly, at the beginning or ending of every lecture of the Vedas), as the Jews have taught us to use the word Amen. The *Guyatri* (called by Jones the *Mother of the Vedas*), the holiest text of Sanscrit sacred literature, is expressed by the sacred triliteral **AUM**. (See Coleman's Hindu Mythology, chapter x., and his second plate for a picture of the idol *TRImurti*, or Trinity.) Higgins, in his Celtic Druids, chapter ii., section 224, says that the **OM** or **OM***h* of the Irish Druids meant 'he who is.'

OMFE, *ομφη*, is the name given in Greek fable to the black dove who founded the Delphic oracle. By a black dove was meant, of course, some member of an order of priests or priestesses dressed in black, commissioned from some older shrine of divination to a new one at this spot in Greece. But we must not forget that the Holy Ghost of the Christians took this form of a dove; while that of the older Hebrews was always called a voice (*col*), or a breathing or rushing wind (*ruh*). (See Gen. ii. 7; Ps. xxxiii. 6, &c.) The Alexandrine father of the Christian Church, Origen, taught (of course, by virtue of the Egyptian influences by which he was surrounded) that the Holy Ghost was female. His expression is:—*παιδισκη δε κυριας του ἁγιου πνευματος ἡ ψυχη*, 'the soul is handmaid to her mistress the Holy Ghost.' Higgins (in his Apocalypse, vol. I., book iii., chap. 2, devoted to this word OM) gives the etymology of *μφη* as *divine voice; responsum a deo datum consulenti*. The *om* represents divinity, and the *fe* or *pe* represents voice or face (Greek verb *φημι*, to

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speak; φαω, I see; Hebrew פה and פי, face, mouth). Suidas calls ομφ, θεια κληδων, sacred voice, holy sound. Jacob Bryant is very learned in his treatment of the ομ in Greek names, and names of places, where he shows that the Greeks themselves were ignorant of the meaning of ομφι. Ομφις is the second name which Plutarch gives to Osiris; and Champollion sees in it the *oun-nefer*, "the beneficent," of the monuments.

OMFALOS. The Phallic worship greatly confused the simple old Arkism. At first sight ομφα-λος means any place of an oracle. Euripides, in Medea, calls Delphi, ομφαλοι της γης, the navels of the earth (as Basnage in his Hist. Jud. III. xiv. p. 194, says the Jews called Jerusalem the world's navel), not only because they conceived of it as central and principal, but because from certain symbolic conceptions connected with the womb. Om-phalos may be nothing else than the *divine phallus;* for we are informed that, in fact, a gigantic phallus, erected in front of the Delphic temple, was anointed every day with holy oil. But other etymologies might be found. For example, φαλος means benignant, and the oracle might be called 'divine grace.' But there is something behind all these words. In one of the pictures in Moore's Pantheon, Brahma is seen rising out of the *navel* of his mother Maia, with the umbilical cord uncut wound round him. The navel represented the ark, and the cord the water. There was a crescent-shaped boat carried about in the Delphic processions, and it had two names: *Omphalos*, the navel; and *Argo*, the ark. That seems to tell the story plainly enough. The true etymology of *omphalos*, or as in Latin, *um-bilicus*, is om-baris, the divine ship of Osiris, the Holy Ark. The human belly received its name from its bulging, mountainous form. Hence the Phtah Sokari or dwarf god of Egypt, with the scarab on his head and two crocodiles under his feet, is represented with an immense belly.—The woman's belly represented the tumulus with the priest within concealed.

Whether Ammon, Am-un, received his name from this mystic syllable, or from the syllable *man*, mannus, menu, menes, &c., it is certain the great god Bacchus had epithets which contained it: for example, *om-estes* (translated by the Greeks *the devourer*), and *om-a-dius, the om god;* by which last he was known in Chio and Tenedos. (Appendix to p. 316.)

Om is the prefix to all the names of the seven heavens in India. It is the symbol of the lord of all, says an Purana, therefore it shall never pass away, although all the rites, sacrifices, and purifications of the Vedas shall pass away. (What a curious inversion this of Jesus' saying respecting his words!) When Brahma, as Chrisna, says to Arjun:—'I am the creator of all; all proceed from me; I am beginning, middle, and end; I am time; I am all-grasping death; I am the resurrection; I am the mystic syllable OM; I am generation and dissolution; I am the fire and the victim also:' and Arjun replies:—'Oh, all in all, infinite in power and glory, father of all, there is none like thee!' it is impossible to mistake the general sense of OM in composition, nor to remark the immediate juxtaposition of OM and the ideas of generation and destruction. Its use in the Phallic mythology was inevitable. Hence the Roman nurses used the letter M, but pronounced by them (as Pliny tells us in Book 28, c. iv.) *mu*, as a charm against witchcraft and the evil eye, especially against fascination by the god Fascinus, whose image was a penis or phallus, and was worn about the necks of the women and

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children, like the Agnus Dei of the Christians. The truth was, an image of the mountain or the ship was a charm against danger from water, so a water symbol, like this M, was a protection against the phallic mountain, the male organ of generation.

AM, אם, was the old Hebrew word for mother. It is used in connection with Eve, in Genesis ii. 24. But it would occur in Arkite mythology as the name for the ark when considered as a virgin mother. The *al-ma* of the Phœnicians, *al-ne* of the Hebrews, meaning *Virgin*, became the *Alma mater* of the Latins, a word unknown to the Greeks, but meaning *the mother*.—Respecting the name *Um-gummel*, on the highland east of Heliopolis, Wilkinson says that the prefix **UM** is remarkable for its antiquity, and stands before the names of several mountain-ranges in the Goshen desert. "It is an ancient African word," he adds, "implying *greatness* or *excellence*, as in *Ama-zulu* among the Caffres, and in Berber names in North Africa; but it is not related to the Arabic *um*, or *om*, mother."

OM is solar fire, says Sir William Jones. *Hme* (חמה) was the female solar orb in Syria. **AUN** and **AN** (אן, אן) is the way the name of the Egyptian city of the sun is spelt in Hebrew Scriptures. (A word translated 'strength' in other passages.) In these instances we see how the sun-worshipping mythology, like the phallic mythology, adapted the Arkite words to its own use. What connection this Syrian sun-god had with **HaM** (חם), the son of Noah, to whom Egypt was given (according to the LXX), we do not know.

OM-BAR represents the most common compound of OM; but it infers an element of obscurity; since by an organic law of language, illustrated by Haldeman and others, M followed by certain other letters either takes a B after it, or converts the following letter into B. Thus, a proper name like *Omri* must come in course of time to be pronounced *Ombri*. Notwithstanding this source of error, we are safe in dividing most words of this form into *om* and *bar*, in which case we have the two most sacred of all ancient Arkite words. Sometimes the *bar* will have reference to the mountain, and sometimes to the ship.

Ombria, for example, is the name which Pliny gives to an aerolite, calling it a precious, or sacred stone, which has descended from heaven (N. Hist., 37, x.) Nothing could equal such a fetich in the eyes of an Arkite; unless it might be the next example. It is possible that the Hebrew word for stone, **AVN** (אבן) has some connection with it also, for it is constructed like the *aum* of the Hindoos, and gave name to the place where Jeroboam set up the worship of the calves for Israel.

Amber, the precious gem found floating on the sea, and found cut intc the shape of an animal in one of the lake-dwelling deposits of Switzerland, is another instance. Pliny says that in ancient Egypt it was called *sacal* (the Latin *sacer*, holy). Its Hebrew name in Exodus xxx. 34, where it forms an ingredient of frankincense, is the same, *Sheceleth* (although the LXX translates this word, marine onyx, *blatta byzantina*, an odorous Eastern shell). The Scythians also called it *sacrium*. Some have thought that Sicily, or Siculia, got its name from furnishing this gem. But it is easy to see that the Arkism was as good for the three-cornered Etna-bearing island as for the amber. The Greek name for it, Electron, seems to be quite another thing, and etymologists have talked

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of *elek-tor*, radiant star, and *elek*, the Arabic name for tree-gum, and *schachal*, the Aramean verb to sweat and weep. But as the Greek *logos* is the Hebrew *col*, a voice, and would be *scol* if the terminal *s* were also included in the inversion, so the Shemitic *sacal* could become the Greek *elek*, losing the *s*; or rather the Greek *elektr*, converting the *s* into *t* or *r*. Homer's *elecktron*, an alloy of gold and silver, merely resembled amber in colour. The Phœnician rosaries were of alternate gold and amber beads. The mysterious origin of amber gave it great price in Arkism; the poets sang how the sister Heliades mourned their brother Phaethon, were changed to poplars, and dropped their amber tears into the Eridanus or Po, which Nilsson makes the German river Eider, between which and the Elbe the amber coast Raunonia (read Rauronia, as Geneva Genabrum was called in the middle ages *Gebenna*), from *Rav*, *Rafr*, *Röv*, the Scandinavian and Frison names of amber. As the palace of Menelaus was adorned with gold and amber, so in a palace near St Petersburg there is an entire room walled or wainscotted with pieces.

Umbri. This will stand for an example of the extensive use made of Arkite radical words for designating societies and populations as religious communities. The Umbrians were a powerful people before the rise of the Etruscan power. Niebuhr says that the Greeks recognized in the name *ombria* an allusion to a very high antiquity. Pliny says that its inhabitants were supposed to be the oldest in Italy, and were called by the Greeks *ombri*, because they were the only survivors of a general deluge. (Nat. Hist. B. 3, chap. xiv.) There were Heraclidan traditions of one *Italos* or *Itoulos*, the father of Italy, whose name signified *a bull*. If this was not a conceit engendered by the Latin word for calf, *vitulus*, then we must see in it a direct Arkite reference to the Arabic *tel* (mountain), and Greek *tauros* (bull). Italos was *I-tobul-us*, like Aris-tobul-us, &c. In the bull we have the mountain radical in Um-*bri*-a. The word occurs in Humber, Cumberland, &c.

UM means *around*, circular, and connects the radical with the Druid mythology, or the sacredness of the circle. The Latin *circ-um*, around, contains the word *church* and the sacred syllable *om*. This also is a branch of astronomical or solar mythology; the ancient circular dances and processions are still in full force in the Catholic Church. The Latin word for going around or being *ambient* is *am-bire*. There are other words (like *am-biges*) which retain the same meaning. The German *um zu* placed before verbs is another instance. Jamieson, in his Hermes Scythicus, page 6, shows the circular force of this radical in the northern countries of Europe.

Appendix to pages 300 *and* 321.

A·NUP. *Anubis*. The jackal-headed staff occurs in the prenomen cartouches (fig. 21) of **RaNUSR**, the fifth king of the 5th dynasty, and of **RaUSK**, the first king of the 6th dynasty, in the newly discovered tablet of Abydos; and is read in both of them as the letter **U**. It occurs again in the prenomen cartouche of **RaUSS**, a king of the 11th dynasty. It is the first letter in the names of Osortasen I., II., III., of the 12th dynasty. But when we come down to the times of the 19th dynasty, and find it in

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the prenomen cartouche of the great Rameses, it seems to have its original symbolic meaning of guardian,—'the sun, guardian of truth.' In the prenomen of Seti II. we must evidently read, not literally **RaUToUMAMN**, but symbolically 'Sun, guardian of worlds, beloved of Ammon.'

The first letter of the name of the Pharaoh of the 19th dynasty, who came between Ramses I. and Ramses II. (Sesostris), who began to build the Ramessium of Abydos, and whose oval (the 8th in fig. 21) closes the great tablet of Abydos and is repeated in a multitude of places on the walls of the corridors,—is called by Sharpe **OIMeNePhTaH**, or 'Osirëi approved of Phtah.' But as he was a great king-builder his ovals are in great confusion, and sometimes read (as in the 7th of fig. 21, from Wilkinson) **PhTaH-MeN-S-PhTaH**, 'approved of Phtah, son of Phtah.' Here Phtah has usurped the place of Osiris. But in some of his ovals the image of the dog-headed deity Anubis occupies that position, and in many of them Anubis has been chiselled out and Osiris substituted; perhaps from some change of politics or religion. There is some trouble also about his name Oserei having been once Sethi, and a tradition that his body was refused burial. Whether all this has anything to do with identifying the old god Anubis and the old devil Seth,—or with the substitution in Genesis of Seth for Cain and Abel, I do not know. But Sharpe affirms that the squatting jackal with his tail erected (see his figure p. 71, vol. I. Hist. Egypt), looking very much like the Hebrew א, aleph, was the letter A or O which was chiselled out to make place for Osiris, everywhere from Ethiopia to Sân, upon the sea-coast. Wilkinson suggests that this king was not admitted into the Theban lists because he was a Memphite (which may have had something to do with his change of religion), or because he was only 'king consort' of the Queen Taosiri. But that there was no conflict in the mythologies of Osiris and Anubis is seen from the fact that the jackal staff vowel, U or O, occurs in this queen's oval, as the first letter of the word Osiris; as it does in the name of Osirtasen.

On the monuments the jackal is frequently seen couchant on the top of a miniature temple or façade of a tomb.

Fig. 21.

The name Sab, or Seb, occurs mythologically in a very curious sepulchral document of the 11th dynasty, discovered by M. Mariette at Abydos, and published in the Appendix to his Catalogue of the Musæum at Boulaq. On this cenotaph of an official named *Roma*, the god Osiris is addressed thus: 'Hail to thee, Osiris! first son of the God **SEB**, eldest of the five divine children of the goddess *Nout*, eldest grandson of *Ra*, father of fathers, placed near *Ra*, king of ages, lord of eternity . . . Uræuses around his head . . . No one knows his name. Innumerable are his names in the

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cities and provinces. The sun rises by his will... He makes prosperity... Osiris of *Abydos*, lord of *Tattou*, king of *Amenti*... Saluted by *Beset* in his double form... I come to thee, Osiris! master of *Toser*... Accord me to be luminous in heaven, powerful on earth, and justified like the lords of the graveyard...' &c.

It is very remarkable that the dog Cerberus, sitting on its haunches on an altar before Osiris, in the celebrated soul-weighing judgment scene in the Theban tombs, is a bitch, and its figure instantly recalls to the spectator the she-wolf of Rome.

Appendix A *to page* 301.

The Sphinx. The platform of Magnesian Limestone rocks, upon which the pyramids of Gizeh stand, is an irregular promontory of the great table land, the eastern edge of which forms the western barrier of the valley of the Nile. At this promontory the edge of the table land begins to make its trend towards the north-west and west, or, in other words, begins to make the south-west barrier of the Delta. Before the deposit of the Delta this promontory and the opposite promontory, on the end of which stands the citadel of Cairo, together, formed the gate at the mouth of the Nile. It is hardly proper to say, as in the text, that the sphinx stands '*all alone*' as 'an *isolated* outcrop of rock rising from the inundated valley of the Nile.' It is a mere protuberance, at the very edge of the platform; and it is so small, while the platform stretches away as far as the eye can reach, and it is so overhung by the enormous masses of the larger pyramids, and is so near and subordinate to the three small ruined pyramids, which screen the base of the Cheops, that it remains an insignificant object in the landscape, until it is closely approached. This could not have been quite so much the case before the accumulating of sand had been permitted to bury it nearly up to the level of its back; but nevertheless its mass of rock was never more than one of the many accidents in the rock outcrop wall which here rises from the plain. The most remarkable feature about it is the visible dip of the strata eastward, causing an appearance of insecurity in the position of the sphinx, as if it might at any moment begin to slip and slide forward, and not stop until it was buried in the mud of the plain. This dip is brought into bold relief by the deep and regular weathering of the rock mass out of which it was cut. Any good photograph of it will show how the weathering has gone on; but the traveller will be interested in observing that the same eroding process has gone on in the case of all the rock-surfaces near by; as may be seen upon the outcrop a few hundred yards to the north of it, in which are the open grottoes where visitors sometimes spend the night; and in the outcrops along the road ascending to the north face of the Cheops; and even on the surfaces of the great blocks in the base of the pyramid itself. The climate of Egypt has formerly been much more destructive to building-stone than it is now; but even now it weathers into new-cut surfaces with ease and rapidity. The sand which half buries the sphinx is the blown debris of all these weathered rock-surfaces. In a few more thousand years the head and breast of the sphinx will be mouldered down by the action of the air into an indistinguishable roundish 'cheese-ring.' It has been a

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good fortune for us of the 19th century that the sand has been carelessly allowed to accumulate about these monuments, and so preserve them for our curiosity.—The dip of which I have spoken, continuing to rise gradually westward, obliged the Pharaohs to cut out areas to contain their great pyramids, and at the same time gave the Memphite nobles a chance to excavate horizontal tombs in the wall of the area behind the pyramids, that is, facing their western sides.—In spite of all that has been said, however, it remains true that when the platform of rock, its front wall over a hundred feet high, its larger and smaller pyramids, and its tombs, were kept in good order by the government of ancient Memphis, as its Père-la-Chaise, the sphinx must have presented a rare and splendid show to the processions of priests and mourners as they ascended, by a slanting highway, the cliffs directly in front and underneath it. In fact, its position could not have been more happily chosen had it been entirely of artificial manufacture.

I have spoken on page 306 of the meaning of the sphinx figure as a female. The Egyptian sphinxes are often androgenous, being furnished with beards, and it is possible that the great sphinx was provided with this sign of virility, although no trace of it now remains. But the usual interpretation, of combined intelligence, strength, and speed, does not in any case hold good, for the sphinx possesses no wings. And even when wings are given to chimerical emblems they do not necessarily imply speed, because the wing was used like the hair, like wool, like scales, and like the twisted cord, to symbolize water.

There is a strange, but very common, mythological Egyptian sphinx, related to the tombs, the goddess *Thoueris* of the Greek writers, in Egyptian *t*-**AP**-*oër*, 'the great (female) **AP**,' or simple *t-oër*, 'the great one' (feminine article). She has a hippopotamus' body and griffon's or lion's claws, and sometimes a lion's head. Plutarch calls her the concubine of Typhon, as Isis was the wife of Osiris, his brother. Her name suggests a new etymology for **TABOR**, namely, 'the great, or vast.' This goddess carries the mystical knot; see Catalogue of Boulaq Musæum, p. 94 & 95. But the most important connection of this goddess is through her proper name, AP, as a hippopotamus, with APis, the sacred bull, whose name, Mariette asserts (Catalogue, page 92), is frequently cited on monuments of the age of the pyramids, and whose worship (Manetho is quoted for the assertion) was inaugurated by Céchoüs, a king of the second dynasty! If this be true the precedency of Anubis is brought into serious question.

Appendix B *to page* 301.

The Egyptian Cornice. Since seeing the remains of the Egyptian piles myself, I am much less impressed by the overhanging massiveness of the cornice, when compared with the vast heights and breadths of the walls. It seems to me also very possible, that the idea of the cornice was either generated, or at least reinforced, by the magnificent lights and shadows of the natural cornices of the cliffs which border the valley, and over at intervals the water of the Nile. The strata being almost universally horizontal (with only an insensible rise towards the south), and consisting

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of alternate courses of soft marls and harder limestone, there ensue series of overhanging cliffs and long, straight, even ledges of rock, at various heights, from fifty to five hundred feet, above the river, calculated to impress the imagination powerfully.

Appendix to page 302.

Origin of the Egyptian population. The slave trade is forbidden by law, and slavery is nominally abolished in Egypt. Yet in actual fact a very large number of blacks are held in slavery in the valley of the Nile; and the British vice-consul, Mr Reed, disguised as a Mogrebbin Arab trader, visited thirty or forty slave marts in Cairo, and other places in the Delta, and found three thousand slaves for sale in them, in the summer of 1867. In all ages of the world the negroes of the interior have inundated Egypt. All the sailors at the First Cataract, and all the guards and watchmen of the houses and stores of Alexandria, are intensely black Berberines, who are accounted the most courageous and the most reliable servants in Egypt. Many of the slaves of gentlemen at Benisuëf, Assiout, and other large towns upon the Nile, are so peculiarly black, that even the 'white of the eye' is black; and the skin, not being glossy, presents none of those reflections which play upon the face of the negroes in the United States. The tablets of the Pharaohs recount repeated conquests of negro nations, ending with their deportation *en masse* and settlement in Egypt. The whole population of Egypt, with the exception of a few thousand Frank strangers, and a few thousand Turkish and Armenian families, whose colour is kept pretty white by marriage with Circassian slave women, is either quite black or of various deep mulatto shades. It may therefore be safely said, that, in the main, Egypt has been settled from the South, —from the negro lands of Central Africa; and I believe that this black-skin origin will prove to correspond with a primeval mythology indigenous also to Africa.

Two exceptions to this rule must however be noticed. First, the Arab tribes of the desert on the west, and of the desert between the river valley and the Red Sea, although themselves black, and oftentimes as black as Darfour negroes, are evidently a separate race. But the monumental history of Egypt shows that they were always nomades, always enemies, and never much adulterated the popular blood of the valley of the Nile. The traveller sees in many places the remains of the vast wall which the Pharaohs built at the edge of the desert, from the Delta all the way up to the first cataract, to restrain the incursions of these untamable and hostile barbarians; a wall five hundred miles long, and oftentimes approaching within half a mile of the eastern bank of the river. These were the shepherds whom the Egyptians always and naturally held in the greatest abomination, and whom the existing government still holds in such respect, that it levies no taxes on them, and dares not refuse them the right of carrying arms, while all the fellahin of the valley are disarmed. The affiliation of these Arabs with the tribes of the Arabian peninsula, and with the tribes of Syria, is of course well known, and may help to explain the history of the conquest of Egypt by the Hyksos.

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The second exception relates to a peculiar race which inhabits the sea-coast of the eastern division of the Delta, and allowed to be the descendants of a Shemitic population, identifiable perhaps with the Hyksos themselves, whose capital was Sân, near the coast. In the ruins of Sân there have been discovered sufficient evidences of the fact that the expulsion of the Hyksos was a very imperfect operation; that, in fact, a large part of the Hyksos people never left the Delta, at the time when the Hyksos government was destroyed and its leading men were exiled. All this amounts to saying, merely, that the country of the Delta between Cairo and the Suez Canal and the sea-shore has always belonged ethnologically to Asia and not to Africa, and has never lost or greatly changed its Asiatic population. The presence of Hebrews in this part of the Delta, or in the 'table land' (Goshen) back of it, in extremely ancient times, becomes a fact of comparatively slight importance; while the great role which the Jews played in the history of the Delta, for five hundred years before the time of Christ, receives an easy explanation.

The traveller from America however is greatly astonished to see, as he ascends the Nile, men of a perfect copper colour, standing in pairs and groups upon the bank, at intervals, quite naked, working *shedoofs* or dippers, to lift the water of the river over the bank into small canals, which run inland to irrigate the fields. These men are tall and strong, but rather slim, very graceful and dignified, but lively and cheerful, and when wet by the dripping buckets, their skin shines in the sunlight like the side of a polished copper kettle; both colour and lustre quite metallic. But when the skin is dry a white film or plum bloom spreads over it, which may be due to sweat, but is noticeable on them when quite at rest. In this copper skin we have the exact representative of the *red*-coloured flesh of the Egyptian on the monuments. There is no mistaking it. What the origin of this race is, or whether it be a separate race, I do not know; nor how, if it be a separate blood, it has kept itself distinct from other Egyptian blood. But it is in relation to the *red* Egyptian that the question of the origin of the Pharaonic regime becomes of ethnological importance.

Appendix to page 303.

Εν αρχῃ, in the ark, 'in the beginning.' The Hebrew *bereshith*, in the beginning, from *rosh*, the head, contains apparently the same root: *rosh* = *orsh* = αρχ. It is very curious to see how the Latins retained the use of two letters, which the Greeks converted into one. The Copts wrote CH like the Latins, out of which the Greeks made χ. The Copts were followed by the Latins in writing separately TH, out ot which the Greeks made θ, by crossing the Coptic *h* with a line, instead of writing the *t* (a cross upon its side) in front of it. The Coptic CH is, when pronounced, not *kh* but *sh*.

Appendix A *to page* 307.

Music. This perpetual waving and wailing, ascending and falling cadence in music, is especially noticeable in the native music of Egypt in the present day.

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Appendix B *to page* 307.

Lotus. I have said little or nothing in the text about the symbolism of the papyrus tuft and bud, which shared, with the lily flower and bud, the veneration of the Egyptians, because they are in the Arkite sense mere substitutes for one another, and are mistaken for one another by all travellers. The papyrus may reasonably be considered a later symbol, adopted for the purpose (among others) of distinguishing Lower Egypt, of which it was the peculiar emblem, from Upper Egypt, whose emblem was the lotus. Of course its use in literature gave to the papyrus tuft and plant a peculiar sacredness. One of the most beautiful objects in Egypt is the pair of square monoliths with square heads in front of the shrine at Karnak, on the tall smooth sides of one of which you see, in high relief, merely three stalks of papyrus, and on the other three stalks of lotus.

Appendix A *to page* 308.

Fir-cone. When split through the apex and centre the fir-cone shows a section which reveals the seeds in their cells. This section was adopted by the priestly architects as the theme of the most beautiful of all running ornaments, the Greek honeysuckle moulding. Single sections were erected upon the summit and at the outer angles of the pediment of the Corinthian temple; situations where the Latins used the urn.

Appendix B *to page* 308.

Anch and tam. These two symbols, the sign of life, or *crux ansata*, and the hoopoo-headed fork-footed staff or tam sceptre, occur incessantly and universally upon the walls of the monuments of the middle and lower empires. They form running mouldings along the surbases of the walls, following around the angles, and binding the parts of the building together with lace-like fringes. They form bands at intervals from the base to the capital of the columns in the porticos of the temples at Denderah and at Edfou. They cover, in regular horizontal stripes, the whole inside wall of the triumphal gateway which stands by itself in front of the ruins of Karnak, the superbest gateway in the world, in the presence of which the far larger Arc de l'Étoile at Paris would seem cold and tasteless, and the little arches of Titus and Severus the erections of prosaic boys.

In the hieroglyphic records the natural alliance and the usual appearance of the *anχ* is with the isosceles pyramid, the two together meaning 'giver, or gift, of immortality.' But in ornamental architecture, and in the symbolism of royalty, the *anχ* and *tam* go together. The *tam* is held upright by standing and sitting gods and kings, and expresses simply and always *governing power*, or the *right to rule*. Added to the *anχ* it means *immortal sovereignty*. The combination is accomplished in many ways. On the running mouldings the *anch* stands between two *tams*, the hoopoo-heads of which are on a line with and looking at the handle of the cross; and all three stand on the flat base of a segment of a circle. This group

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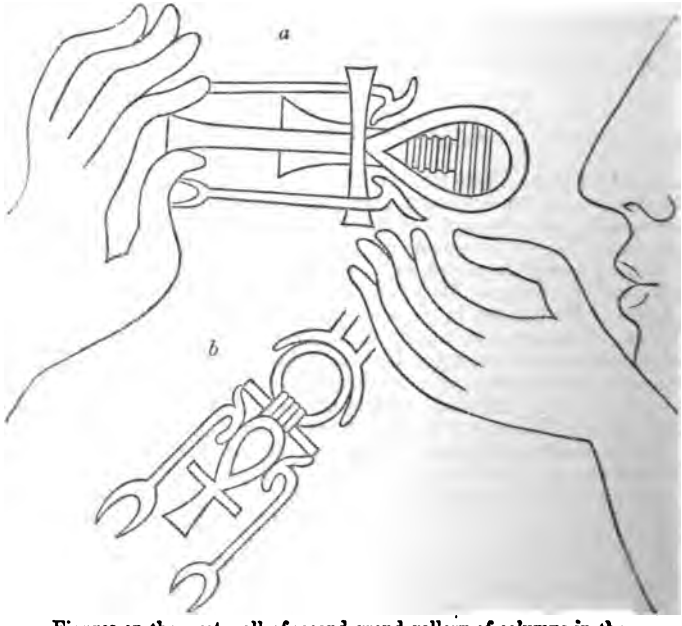
is then repeated as often as is needful to go round the column or along the wall. But the sign of life is frequently seen issuing from the hoopoo-head of the tam sceptre, and often in connection with the nilometer or *tat*. Sometimes the hand which grasps both the *tam* sceptre, the flail, and the crook, holds also the handle of the sign of life: this is the case on all the walls of the palace of Rameses II. at Abydos.

In the text I speak of the *ring* of the *ανχ*, or *crux ansata;* but after copying it a hundred times and in many styles of art, I was unable to find a single instance where the handle of the cross could properly be called a ring; it was always a loop. An apparent exception to this rule only makes the rule more manifest. The protecting vulture over the head of certain Pharaohs always holds in both claws, or more properly stands with both talons on the upper curve of a ring, to the bottom of which is attached a crosspiece, or water-line; but in no case does this become a cross. This distinction is consistently maintained between the round ring with the crosspiece in the bird's talons (called a seal, *χtm*), and the pear-shaped loop to the cross in the priest's or god's hand. The loss of the upright of the cross in the first case is not strange; since that represents the mountain, which the bird (or ship), when floating on the water-line, has left far

Fig. 22.



Figures on the west wall of second grand gallery of columns in the Ramesseum at Abydos.

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beneath it. But the invariability of the pear-shape of the loop of the *crux ansata* I cannot explain. For granting that it was made actually of leather and strapped down to the crosspiece (as an examination of the larger representations of it will show was the fact), it is wonderful that it was never made of bronze or copper or gold, or other rigid substance, which would keep the circular form.

I have alluded in a note on page 310 to the figures of gods or priests approaching the face of a Pharaoh, as an artist would measure the features of a statue with a pair of dividers formed of a combination of two *tams* enclosing an *anch*. This action is repeated on many of the monuments of Egypt, and represents, in some cases at least, as in the celebrated annunciation scene at Karnak, the introduction of life into the person. In that scene two goddesses are introducing into the mouth of the queen mother their *anchs*, to give life to her conception of the young Pharaoh. On one of the walls of the Ramesseum at Abydos I noticed a beautiful combination of the nilometer (*tet*), the sistrum, the sign of life (*anch*), and two sceptres (*tam*), presented to the lips of the Pharaoh: Fig. 22 *a*. And over his head the vulture holding the ring and crosspiece (*chtm*), to which was attached an *anch* and two *tams*: Fig. 22 *b*. In the first case the loop of the *anch*, receiving the head of the *tet*, with its four normal cross lines, is also crossed by three supplementary bars, which convert it into a sistrum.

Appendix to pages 309 *and* 310.

Pyramid amulets of the Bronze age. In Macmillan's Magazine for Sep., 1867, there is an interesting article, describing the discoveries of flint instruments in the upper and lower gravel beds of the *Ponte Molle* quarries, outside the walls of Rome, by Sign. Ceselli, beginning in 1846. The author goes on to say, that among the numerous arrowheads and what not in the splendid cabinet of M. Ceselli, are two or three of a very peculiar shape, and very small. They are between an isosceles and equilateral triangle in shape, and about three-quarters of an inch long. At the *back* the natural fracture of the flint remains, and this is a characteristic of the earliest worked flints. But the *front* has three bevels carefully and skillfully done, following the three sides of the triangle. The *top* is purposely not brought to a point, and has a peculiar indentation on one side, by means of which the article could be suspended from a thread around the neck. It was an amulet. A few days after his discovery of these he detected another in a basket full of fresh specimens, just brought in from the ploughed fields of Montecelli, 20 miles from Rome, to the Abate Carlo Rusconi, for his cabinet. Again, he found this form of amulet among the 'Etruscan' gems in the shop of the great jeweller of Rome, Castellani, who considered them far older than the Etruscan era, and called them Pelasgic, for want of a better name. These were found at *Præneste*, and were made of rich red amber, wrought and polished with superior skill, bevelled three ways in front, and left plain behind, and furnished at the top with a regularly perforated bead or buglehead, by which they could all be strung together. There were about two dozen.

The ancients have left abundant proofs that the flints of the Stone age

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were regarded as heavenly productions, thunder-stones, *Ceraunia*, and *Betuli*, and were worn as amulets. Fossil teeth also were so worn, and called tongue-stones, *glossopetræ*. In Castellani's collection were some of pre-Etruscan age, in their natural condition, but mounted in holders of exquisite workmanship, in gold, and others *imitated* in agate, bloodstone, &c. Pliny recounts that they fell from the sky in the wane of the moon. But the ancients knew also of their occurrence in the bone earth of caves; for in Sign. Rossi's pamphlet, quoted by the author of the article in Macmillan's Magazine, Claudian is quoted saying:

. . . . . Pyræneis que sub antris
Ignia flumineæ legêre ceraunia nymphæ.

Water-nymphs have collected fiery thunderbolts in the caves of the Pyrenees.

It is not strange, then, that the arrowhead thus worshipped, and thus worn as an amulet, should have been adopted as the sacred type of the Assyrian alphabetic character.

The use of amulets dates from the origin of the human race. The cases of the Boulaq Museum are full of them. They were not only in the form of scarabei and little gods. I noticed scores of little *nilometers;* scores of little *neck-pillows!* and on the wall of the Serapeum at Saqqarah I saw and copied a human figure, holding a neck-pillow in his left hand, as if it were the sign of life—which I feel sure it was; for the lune-shaped upper piece to receive the head, the upright stem, and the flat horizontal base-board, together exactly make up the triple symbol. (See top of page 300, and bottom of page 263.)

But the most extraordinary of all the kinds of amulets in the Boulaq Museum were those in the shape of a Roman letter **A**, I should say an English block-letter **A**, cut out clean and smooth from a plate of bronze or other metal, and sometimes drilled at the apex to receive a thread. This fact fully bears out all I have said on pages 236 to 239 of Lecture IX. on the alphabet. For in this Boulaq collection this sort of amulet is illustrated by a numerous suite of specimens, showing a gradual transition from the plain triangle through the triangle notched at the base, or engraved so as to bring out the mason's square, up to the plain square (sometimes with a bugle soldered to its edge) and the square with its cross-piece, and finally to the isosceles with a cross-piece, in the exact form of an **A**.

M. Mariette (in his catalogue, page 133, Vitrine M) says that the angle, or square, was a symbol of mystery and adoration, the triangle of equilibrium, and were hung about the necks of the mummies to mark that eternal rest which awaits the just. No doubt. But the question is how did they acquire that meaning? and why do they assume the shape of the letter **A**?

The Book of the Dead directs also that little columns of feldspar, and seals of lapis lazuli, discs of red paste 'placed on the character *mountain*,' as well as nilometers and signs of life, should be suspended at the neck of the defunct. *Fibulæ* and amethyst cornelian, hematite, and green feldspar *hearts* are also found with mummies. Sometimes a scarabeus is engraved on the heart; and sometimes the bird *bennou* (the phœnix). See Appendix to page 236, above.

See also the curious offering of onions, tied into the form of the lacus-

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trine amulet (figured in the text, page 310), which Wilkinson figures on page 324 of the first volume of his Ancient Egyptians.

Appendix to page 316.

B, *beth*, a house. I have referred in the text to the inversion of *beth* = *theb*, bringing this letter into its proper Arkite relationship. Its Hebrew square form ב seems to me directly derivable from the hieroglyphic letter , read *h* by Egyptologists. Its sound was a gentle aspirate equivalent to the Greek η, because its Coptic name was (in Greek letters) **HI**, but the meaning of this name ηι in Coptic is *house;* and while the Hebrews gave this meaning as a name to their letter *beth*, they used the form for their phonetic *b*, because *b* is the initial letter of *beth*, their name for a house. But there are other connections. Isis was characterized by her ship or ark. Yet the monumental name of Isis is composed of three symbols, read **MNH**, or in full, Coptic, *Men-n-ei*, that is, *mistress of the house*. This meant, no doubt, goddess of the temple. But it must have meant more than that; for every deity was equally master or mistress of its own temple. It points to an original identity between house and ship, *beth* and *theb*.

It is something more than a curious coincidence that this name of Isis is almost exactly that of the half-historical, half-mythical Menu, Mena, Menes, first king of the first dynasty, and founder of the oldest empire. The tablet of Abydos commences with his name (fig. 23), an oval containing three letters, the top one and middle one being identical with the first and second in the name of Isis. The third is a *feather*, A; not the hawk A, nor the arm A, but the ostrich feather, symbol of government and victory: while the third letter in the name of Isis is the *house* H. Now everybody reads these three letters **MeNA**, or **MeNE**, or **MeNU**. The Greeks read it μεννη, which makes it perfectly identical with the name of Isis. But why should we not read it also symbolically as we do the name of Isis, *Men-n-a, Master of the plume?* When we remember, however, that the letter A was used to signify *building* (see text, page 228) and *a house*, the identity of the *names* of Menes and Isis is demonstrated. What this astonishing coincidence means I leave my readers, with the key in their possession, to guess. But it illustrates exactly the idea I have expressed in the text. If the ancient symbolizers of Isis could find three signs that signified her character, they did not care what the juxtaposition of those three signs or letters would produce in the shape of a word; whatever that word should be they would adopt it as one of her names.

Take another instance. The name of the god *Phtah* has never been satisfactorily explained by mere comparative philology. The Pharaohs used it as part of their names, *beloved of Phtah*, **PhTaH-Mai**. The dwarfish, big-bellied images of the god in the Museum of Boulaq all have a scarabeus on the head, and two crocodiles under foot. The scarab meant the world, as all acknowledge; the crocodiles meant the waters; the big belly, bandy legs, dwarfish figure of the god were characteristic symbols of the mountain with its mines and horrors. To express these three ideas in hieroglyphs was easy enough. A circle for the world-ship, a semicircle for the mountain, and a waved line for the water—and the

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triple symbol was spelled. But the circle was already devoted to the solar orb, so they took the square, meaning house, enclosure of any kind. For the waved line they took the twisted cord, which symbolized water. But the square was the letter P aspirated, the semicircle T, and the three-looped twist of cord H. When these were put together in the Arkite order, ship, mountain, water, they gave the priests a new name for their divinity —**PhTaH**. Afterwards, when an M had to be added, meaning *beloved*,

Figure 23.

it became more convenient to stand the twisted cord upright alongside of the *P*h and T, as in fig. 23. This dwarf, by the way, is the *Phtah pateques* of Herodotus [father of waters?], whose image stood on the prow of Phœnician ships, a sort of Castor, or Pollux; in whose names, without discussing them further, we read at least the *tor* and the *bar;* and whose issue from Leda's swan-egg would make Castor's name unmistakably Arkite, even if it were not the name the ancients gave to the beaver, on account of its wonderful habit of building half-submerged Ararats for itself to live in.

If the A in Menes' name, fig. 23, be not a feather, but, as some maintain, the Coptic *Ake*, a reed, or its plume, then we have another illustration of this word-building; for the M symbol will float on the water-line N, and under it will be the obeliskal submerged reed or Alpine letter A.

And if the M symbol represents an ark with its crew, then the group AMN (the usual form of the name of the Theban Jupiter) will be another instance of the same kind; the Alpine symbol A being placed for compactness on one side of the ship and water symbols.

Brugsh, in his book on the Calendar, p. 17, shows that 'Amun' was written sometimes with the figure of a lizard (with only two fore feet, and as if crawling sideways on a wall),—and also sometimes with a cartouche (on its side) containing a single water-line; in other words, an N in an Arn. Is this a hint to be used in our oft-baffled attacks upon the etymology of the name of that Hebrew Ammon, Noah? It is, at all events, of great moment that the Jupiter AMN and the Egyptian Adam MNA should not only be written with the same sounds but with the same letters, and that the only difference should consist in placing the feather with its feather edge looking right or looking left.

Appendix A *to page* 322.

Auspices. Why are the intestines of birds called *giblets?* Because they have anything to do with a fork, in German *gabel?* That would be absurd enough. Or because the heart, *cœur, cor,* is the principal entrail? That is nearer the truth; but reverses the true explanation. The *cœur* is indeed the mystical *cabar,* or shrine of life; but the liver also mystically received the same name, *jecur, ia-cor.* All the entrails were *cabala,* and

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objects of divination. The priest prophesied over the shape and number and posture of the folds of the bowels of the victim on the altar. They were his *cabalistic* machinery, his *giblets*.

Appendix to page 323.

Hoopoo. This legend has a high interest in view of the fact that the *tam* sceptre of the Pharaohs has for a handle the head of a hoopoo; perhaps adopted on account of its erectile top-knot feathers.

Appendix to page 325.

Birds. The pigeons of the valley of the Nile astonish by their numbers. In the Thebaid the situation of the villages is designated to the traveller on the river by a compact castellated mass of square towers, built of mud and reeds, crowned with battlements of goulahs, or large earthen pots, and pierced in stories with ranges of holes for the entrance and exit of the birds. These towers are curious caricatures of the propylea of the temples. The people however make very little use of the flesh of these birds for food, and permit the traveller to shoot among the flocks at his pleasure, wherever his boat may be detained by a head-wind against the bank, or in his journeys inland. But each pigeon-tower becomes valuable to its owner as a storehouse of guano, which is used about the roots of the sugar canes. Nothing in Egypt is more amazing than the infinity of birds of all kinds.

Some of the Egyptian myths about birds are very surprising. The Phœnix story is familiar to everybody. But it seems that the vulture—which plays so large a part on the monuments, and may be seen in flocks, in a striking attitude on the sandbanks of the river, with its wings spread, breast to the wind and back to the sun, while magpies hover and skip among the group, picking at the parasites of the vultures—is accounted in mythology the emblem of maternity. Every vulture was considered a female, and her virginity therefore implied. The vulture-headed goddess of the South, *Souvan* (the Greek Lucina), is represented on the monuments as 'the mother' par excellence. She sometimes hovers as a victory over the field of battle. The 'grand mother, who bears the Sun, Neith,' the Athene or Minerva of the Greeks, is also always a virgin mother. Her son is said on the monuments to be 'conceived, not engendered.' This goddess is the ναυς, or ship, and her vulture is the BAR-TOR.

Appendix to page 327.

Stork. In the King's Tomb, No. 17 (Belzoni's), in chamber No. 3, on the right hand of the gallery, after passing in at the first doorway, I saw a fine painting of the African stork with two long backward-bending head-feathers, sitting upon the sharp apex of a tripod, the three feet of which rested on a sort of flanged board, the flanges preventing the two outer leg-bars from spreading.

The priests used the walking posture of the legs in a great variety of applications. In this same tomb one may see snakes with two and others with four legs in this position. In one of the sepulchral chambers at Beni

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Hassan I noticed an extraordinary object like the horn of an anvil walking (as a letter) upon two human legs, the hinder part seemed erased, and looked like one side of a dish with a loop hanging down; but there was nothing symmetrical about the figure except the legs, and it had a weird expression of life and motion in its front part, which was quite sharp.

Appendix to page 340.

Serpent worship. In the Ramesseum at Abydos there is a beautiful figure of a serpent coiled round a tapering conical vessel set upon a low tripod, underneath a table of one (central) leg supporting a row of feathers, as an offering.

In the tomb of Seti at Thebes (Belzoni's) an immensely long serpent is carried along the wall, by many priests, between every two of whom the snake is kinked into a fold, producing the classical fret moulding, in one instance square and in another round.

In the 'tomb of Memnon' is a procession of twelve snakes, each on two legs ending below in a fork stuck into a short board or stand. Each snake is convoluted in such a way that the same fret moulding is produced by the whole series.

At Dendera I saw the ƀ snake of the alphabet used as the cross-piece of the *sign of life.*

The *cobra* of India is the *cabal*istic serpent above all others.

Appendix to Lecture XI.

MARIETTE'S RESUMÉ OF MONUMENTAL AUTHORITIES, 1867.

Ancient Empire.

I. Pyramid of steps, Saccara (4th king, 1st dynasty).

II. Tomb of Tot-hotep, Saccara. Three statues of family of functionary Sepa (Louvre). Tomb and statue of Amten (Berlin) contemporary, of penultimate king of 3rd dynasty. Diggings at Abydos now going on.

III. Tablet of Saccara gives 2 kings of 1st, 6 of 2nd, 8 of 3rd dynasty.

IV. Pyramids of Giseh, 4th dynasty. Pyramid at Abousir, 5th dynasty. Magnificent tombs at the Pyramids and at Saccara. Temple of alabaster and granite discovered by Mariette at the foot of the great Sphinx, the only architectural monument yet discovered of the ancient empire. Statue of Chephren, founder of 2nd Pyramid (Exposition at Paris).

V. Inscription of Khoufou, founder of 1st Pyramid, 4th dynasty, the great key to the Egyptian civilization. Large style, found at the Pyramid Giseh to the mistress of Snefrou II. and Khoufou, and maid of honour to Schafra. Wooden statue, private portrait (Exposition at Paris). Fine sarcophagi of granite, 4th dynasty. Fifty monolith steles, statues, &c., in Boulaq Museum.

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Middle Empire.	VI.	Monuments at Elephantine, El-Kab, Kasr-es-Sayed, Abydos, Cheyk-saïd, Zaouyet-el-Maïtin, Memphis, San Wadi-Maghara. Great inscription on tomb of Ouna, Abydos, under Kings Teti, Pepi, Meri-en-ka, refutes the assertion that Apappus reigned 100 years (Boulaq). Inscription to a functionary of Abydos, who served under the same three kings.
	VII. VIII.	and also Nefer-ke-Ra.
	IX. X.	No monuments.
	XI.	Steles, vases, fruits, bread, clothes, furniture, arms, utensils, of rude style, in Boulaq Museum. The winged Isis, protecting Osiris, appears. Hieroglyphics are awkward. All got at Drah-abou'l-neggah, Thebes.
	XII.	Amenemha and Osortasen family. Trans. at Ouady Majarah, Kumnah, Semnah. Obelisks of Matarieh, Fayoum (Begyg). Grand hypogees of Benihassan. Grottoes of Syout. Colossi found at Sân and Abydos. Brilliant epoch of art. Formerly called the 18th dynasty, then 17th.
	XIII.	Sebekhotep and Nofrehotep families. Hall of Ancestors. Papyrus of Turin. Steles in various museums. Colossi of Sân. Walls of tombs at Syout, Assouan, Hamamat.
	XIV.	
	XV. XVI.	Hyksos invasion. No monuments.
	XVII.	Hyksos dynasty established at Sân, side by side with a native dynasty at Thebes. Revival of art at Thebes. Reappearance of feathered cartouches in the tombs of Drah-abou'l-neggah (Thebes), vases, arms, &c., as before; gilded winged figures. Old names reappear. Theban kings on the tombs of Qournah, table at Marseilles, &c., &c. Hyksos kings, names of two found. First, Saïtes; last, Apophis (Apapi). Four grand granite Sphinxes at Sân (Boulaq Museum) with a lion's mane, dedicated to the new Shemite god *Set*. Granite group of two figures (Boulaq Museum). Head of Hyksos king at Fayoum (Boulaq Museum). Papyrus of the London Museum. Inscription on wall of tomb at El-kab, of functionary Ahmes, under King Raskenen. Large granite stele at Sân, unreadable as yet.
	XVIII.	Amosis, Amenophis, Thoutmes, &c. Present confusion of records. Inscriptions at El-kab to Ahmes. Base of statue (Louvre). Stele to Neboua. Inscription to Hor-em-heb at Abd-el-Quourneh. Monuments at Gebel Barkal, temple and sphinxes of Amenophis I. Temples of Thoutmes III. at Soleb, Semneh, Amada in Nubia. Beautiful temple of Amenophis III. destroyed, on isle of Elephan-

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Classic Empire.		tine. Granite gate of Hatasou at Ombos. Basreliefs at Gebel Silsileh. Splendid constructions at Thebes. Temple of Deir-el Bahari. Colossi of Amenophis III. Grand tombs of Abd-el-Quourneh. Tombs of Kings in the valley of the west. Great works at Karnak. Temple of Luxor, Amenophis III., finished under the 26th dynasty. Other remains at El-kab, Tel-el-amarna, Gebel Touneh, Memphis, Saqqara, Pyramids, Heliopolis, Serbut-el-Kadim, Wady Magara. Beautiful statues now in Turin. Colossal bust of Thoutmes III., and a recent stele of granite, in Boulaq Museum, with the great poem of the Pentaour. Relics found on the mummy of Queen Aah-hotep, mother of King Amosis, now exhibiting at Paris, and described in Mariette's Aperçu, pp. 92—95.
	XIX.	Sesostris (Rameses II.) Seti, Menephthah, &c. Seven kings. Former monuments completed by these kings. Tombs of Bab-el-Molouk. The most splendid tomb of Egypt is that of Seti I. The rock-temple of Ipsamboul (Rameses II.). Temples at Derr, Beit Oually in Nubia (Rameses II.). Desert monument of Seti I., back of Edfou. Several little temples of Rameses II. at Karnak. The Ramesseum. Seti's temple to Rameses I., at Quourneh. Tablet temple of Rameses II. at Abydos. Grand temple of Seti I. and Rameses II., now excavating. Probably lost temples at Memphis. Fine colossi at Myt-Rahyneh. Temple at Sân, rebuilt by Rameses II., Menepthah and Seti II. Eleven obelisks, many monolith columns of granite, colossal steles lately found.
	XX.	Rameses family. All its kings bear this name. Tombs of Bab-el-moulak. Civil wars. Pavilion and temple of Medinet Abou. Temple of Chons at Karnak, bearing false cartouches of 21st dynasty. Fine stele in Bib. Roy. Paris from this temple, relating the story of the voyage of the god to Mesopotamia.
	XXI.	High-priests at Thebes. Temple between Karnak and Luxor. The legitimate dynasty ruling at Sân.
	XXII.	Nine kings of Tel Basta. Statue of the god Nile (British Museum). Inscriptions on the outside of the walls of Karnak. Inscriptions in tomb of Apis, at Saqqara (Louvre). No great edifice.
	XXIII.	Three kings of Sân. Coushite inscription on stele found at Gebel Barkal. Many collateral dynasties; civil wars. Steles of tomb of Apis.
	XXIV.	Bocchoris. One king; name at last discovered in tomb of Apis.
	XXV.	Cushite or Ethiopian dynasty.

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XXVI. Psammiticus. The Greeks appear in Egypt. Steles of tomb of Apis at Saqqara. Official epitaphs of the sacred bulls. Beautiful tombs of Assassif (Thebes). Rock inscriptions at Asouan, Hammat, Thebes, Abydos, Saqqara. The whole force of this dynasty concentrated itself at Saïs. Here was the lost temple of Apries, described by Herodotus; lost portico of Amosis superior to all others; lost colossus of 70 feet high; lost monolith in chapel of Amosis brought from the quarries of Elephantine.

XXVII. Persians. Cambyses on the steles of Apis. Darius at Hamamat; lost temple to Ammon at Khargeh. Artaxerxes on two fine vases in the Bib. Roy., Paris, and Treasury of St Marc at Venice.

XXVIII. XXIX. XXX. Civil wars. Grand temple at Philæ commenced by Nectanebo II. Additions to Temples at Med-Abou, and Karnak by Nectanebo I. Tomb of Apis at Memphis completed by Nectanebo I. Fine propylon in front of the tombs, Nectanebo I. Statues of Acoris and Nephrenites. Grand sarcophagi at Berlin, Paris, and Boulaq. No trace yet of the rapid subsequent decline of Egyptian art.

XXXI. Persians again.

XXXII. Macedonians. Alexander I. on the granite gateway at Elephantine. Fine granite chamber at Karnak, in front of the sanctuary in the chamber of Thoutmes III., by Philip Arideus. Bas-reliefs of Alexander II. on walls of temples of Karnak and Luxor.

XXXIII. Ptolemies. Great builders. Temples in Nubia, at Dakkeh, Kalabsheh, Debond, Dandour, especially Philæ; in Egypt at Ombos, Esneh, Erment, in detestable style, but of great magnificence. Ornamented Alexandria. At Thebes, Deir-el-Medyneh; little temple on the Birket-abou; grand portal north of Karnak; portal between Luxor and temple of Chons; little edifice by the side of temple of Chons. Denderah—great unread inscriptions, Edfou. Names also at El-kab, Motaneh (Esneh). Akhmin, Behbit, near Mahakeh-el-Kebir, &c., &c. The most beautiful part of the tomb of Apis at Saqqara, and its gigantic sarcophagi. Rosetta stone (British Museum).

XXXIV. Romans. 5400 after Menes. Pompey's pillar at Alexandria. Adrian's Villa at Antinoë (Cheykh-abâdeh). Adrian's tomb to Antinous, the obelisk Barberini at Rome was one of the obelisks and sphinxes before its gate. The emperors built at Kalabscheh, Dandour, Dakkeh, Philæ, Edfou, Esneh, Erment, Denderah.

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Words for God, Spirit, Angel, Devil, in the various langu

A. I.	1.	Vasconice	*Jainco, Jinco, *Jaungoico	'Espiritu, *Megope
B. I.	2.	Finnice	Ju mala	Henki
	3.	Esthonice	Jummal	Waim
II.	4.	Lapponice	Ibmel	Vuåigŋa
	5.	Sueco-Lappo	Jubmel, Ibmel	Wuoigenes
III.	6.	Syrjæne	Jen	Duh
	7.	Permice	(Jen)	(*Zyn)
	8.	Votjachice	(In mar)	*(Zyn') *(Lul')
IV.	9.	Ceremissice	Jóma	'Süles
V.	10.	Morduanice	Páz	Oïme
VI.	11.	Hungarice	Isten	Szellem, Lélek
VII.	12.	Vogulice	(Tarom)	*(Atta)
VIII.	13.	Ostiachice	(Toróm)	*(Epyt'), *(Ebyl')
C. I.	14.	Hibernice	Día	Spiorád
II.	15.	Cambrice	Duw	Yspryd
	16.	Armorice	Doué	Spéred
III.	17.	Epirotice	Πεϱντὶ	Σπίϱτ
IV.	18.	Græce	Θεός	Πνεῦμα
	19.	Neo-Græce	Θεός	Πνεῦμα
V.	20.	Latine	Deus	Spiritus
	21.	Italice	Dio, Iddio	Spirito
	22.	Hispanice	Dios	Espíritu
	23.	Lusitanice	Deos	Espirito
	24.	Gallice	Dieu	Esprit
	25.	Provincialiter	Diou, Dieou	Esprit, Esperit
	26.	Catalaunice	Deu	Esperit
	27.	Rhætice	Deus	Spirt
	28.	Valachice	Dumnezëŭ	Duh
VI.	29.	Gothice	Guþ	Ahma
	30.	Teutonice	Got, Kot	{ˆAtum, ˆAdum, Ahatum, Ahadum, Geist, Keist
	31.	Germanice	Gott	Geist
	32.	Saxonice	God, Got	Gêst
	33.	Neo-Sax.	a. God	Geest
	34.	Hollandice	God	Geest
	35.	Anglo-Sax.	God	Gást
	36.	Anglice	God	Spirit, Ghost
	37.	Frisice	God	Iest, Gâst, Gêst
	38.	Neo-Frisice	Goad	Gaest
	39.	Islandice	Gud	Andi
	40.	Suecice	b. Gud	Ande
	41.	Danice	Gud	Aand
VII.	42.	Slavonice	Bog	Duh
	43.	Russice	Bog	Duh
	44.	Illyrice	Bog	Duh
	45.	Slovenice	Bóg	Duh
	46.	Bulgarice	Bóg	Dúh
	47.	Polonice	Bóg	Duch
	48.	Bohemice	Bůh	Duch
	49.	Sorabice	Boh	Duch
VIII.	50.	Borussice	Deiws	Noseilis, Nuseilis
	51.	Lithuanice	Diewas	Dwáfė
	52.	Lettice	Deews	Gars

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ɔTURE X.

urope, as reported by Prince Lucien Buonaparte.

ueru	*Deabru, Demonio
i	Perkelet, Piru
	Kurrat, Judas, Tigge, Köhn, Köhnrat, Pahharät
	Bærgalakka
	Pärkel, Paha innemi
	Dïavöl, Bės
l	Kel'tęmäs, Dïávol, 'Saïtán, 'Soïtán
	Dïávol, 'Saïtän
ıl	Ördög
ɔl, Aingeal	Díabhal, Deamhan
	Diafol, Diawl, Diafl, Cythraul
ɛl	Diaoul, Aéraouant
ʎ·	Παοῦδε, Δγιάλ·, Σατανα, Δαίμονε
λος	Διάβολ-ος
λος	Διαβολος, Δαίμων, Δαιμονιον
us	Diabolus
o, Angiolo	Diavolo, Demonio
l	Diablo, Demonio
	Diabo, Demonio
	Diable, Démon
Ange	,, Demoni, Demoun
l	,, ,,
el	Giavel, Dimuni
r, Angel	Diavol, Drak
us, Aggelus	Diabaulus, Unhulþa, -o, Skohsl
, Engil	Diubil, Diufal, Tiefel, Tievel
	Teufel
, Engel	Diuƀal, &c., Unhold
	Düvel
	Duivel
, Ængel, Angel	Deofol, Seucca, Sceocca, Scocca
	Devil
el, Angl.	Diovl, Divel
	Dyvel, Deal
l, Eingill	Djöfull
	Djefvul
	Djævel
l	Dïávol, Bęs, 'Cert
l	Djavol, Bę's, Cërt
o	Djavao, Vrag, Hudoba
, Angele	Vrag, Hudić, Hudir, Zlódi, Zlôdéy, 'Cert
l	Dïavol, Bės
	Diabet, Czart, Bies, Bis
l, Angel	'Dábel, 'Cert, 'Das
zel	Djabot, 'Cert
s	Pickuls
as	Wélnas, Szėtonas, Welinas, Czartas, Béfas
is	Wels, Welns

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ERRATA.

Page	line				
29	27	*read*	obscene	*for*	obscure
62	20	„	Jurassic	„	Durassic
95	9	„	Melanesians	„	Milanesians
142	last	„	let	„	set
155	26	„	Nubia	„	Numidia

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Man's origin and destiny : sketched
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